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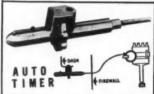
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THIS MONTH'S COVER
WITH INDY occupying top spot in interest at the moment, we give our readers a preview of the masterpieces in metal which will go roaring around the brickyard on Memorial Day. One of the most formidable entries will be Kurtis' latest racing car, shown on the cover. Inspecting the powerful engine are George Bignotti, the owner (left), and Kurtis. Fred Agabashian will drive the car in the "500." Other Indy cars are pictured on page 22; the story of Frank Kurtis is on page 26. In the upper photo, George Barris demonstrates to a pretty young lady the technique of bolting on a custom exhaust tip. Other customizing pointers are given in detail on page 36. Both Ektachromes are by Chief Photographer Bob D'Olivo.

NEXT MONTH:
All the tips given in this issue should inspire customizers to enter the bolt-on custom contest, to be announced in the July MOTOR-TRND. We will also show you how you can beat the heat with air conditioning, and how it is not as expensive to install as you might think. For the economy-minded, we will give inside facts on how the cers were prepared and how they were driven in the Mobilgas Economy Run.



Some spark plugs are designed for low speeds, Some spark plugs are designed for high speeds, but . . .

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Road and dynamometer tests prove that your Ford will give top performance and economy at all speeds with new Auto-Lite Resistor Spark Plugs with POWER TIP.... the first spark plugs ignition-engineered for today's engines and today's driving.





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from the editor

T TOOK A RECENT TRIP cross-country to drive home a point that's been disturbing to us of late: the two ogres of decreasing fuel economy in new cars and the rising cost of gasoline are combining to force motorists to turn to public transportation for cross-country safaris. Even if you like to drive as much as we do, it gets to a point where it's no longer economically feasible.

This four-day trip from Detroit to oLs Angeles covered 2692 miles. The cost of the gasoline alone was \$70.14, at an average cost of 36.7 cents per gallon. Including oil and toll charges on turnpikes, the trip cost \$77.79 or 2.9 cents per mile. And, unfortunately, when you consider other factors such as depreciation, wear and tear on your car and lodging-to mention a few-you'd find that you've spent lots more than any form of public transportation. Two other factors a cross-country traveler has to consider are the value of his time spent on the road, and how much he enjoys being behind the wheel.

When you compare this to an aircoach flight, you find that you'd spend about \$10 more, and about \$39 more for a first-class, non-stop, six-hour flight which gets you to your destination in the matter of hours instead of days.

Taking a coach ride on a train would get you from Detroit to Los Angeles in three days, and cost you \$78.89. This represents \$1.10 more than the trip by car.

It seems to us that the day is fast approaching when all of us will be turning to some mode of public transportation for any trip of 500 miles or more. Unless and until, of course, we get the planned ribbons of turnpikes lacing the country that should allow us to keep up steady speeds, thereby forcing up our fuel economy. If we could get better economy, we'd notice the biggest change in our pocketbooks: one mpg more on this trip would have saved us \$4.81; five mpg more would have saved \$18.03.



WE HAD THE EXTREME PLEASURE

of appearing with Bill Lundigan on Shower of Stars April 11th. Reason: the TV presentation of the 1957 MOTOR TREND Award to Chrysler Corporation for superior handling and roadability qualities of their Plymouth, Dodge, DeSoto, Chrysler, and Imperial cars. If you were not among the 15 million viewers, or if you're one of those who quickly run to the kitchen for a snack during commercial time, then you probably missed us. Anyway, this is what we looked like.

Ouite an experience, this TV. For a total of six minutes of commercial time (four commercials), writers spend days preparing their material; producers, directors, actors, cameramen, prop men, spend hours that drag into days rehearsing, shooting, reshooting what's to be seen on your screen. The publishing business may be hectic, but we'll still take it over television-that we'll leave to the boys with stronger resistance to ulcers.



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In competitive laboratory tests, the SILICON WATERLESS BATTERY produced 400% more power than one of the nation's top-selling, nationally-advertised batteries!

The above statements of fact are certified to be true in every respect.

READ WHAT USERS SAY!

"I used the battery you shipped me in starting 5 cars in 40° below zero weather and the battery did not loss any power!"

E. F. F., Rexford, Montana

"On January 23rd, the official temperature at 8 A.M. was 32 degrees below zero. There were about 20 cars in the parking lot and my car was the only car whose battery turned the motor over fast enough to start a car." D. J. W., East Hartford, Conn.

"I have given the Silicon Waterless Battery some very rigid tests in severely cold weather. Last night it was 22 degrees below zero. My car stood outside and had instant starting power after 10 hours in that cold.",

H. H. A., Winnipeg, Manitoba, Canada



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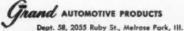
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Grand makes a complete line of duals for all V-8's and 6 cylinder Chevrolets. See your dealer for complete details.



FTTERS



A GOOD AMATEUR

Gentlemen:

My greatest individual interest is automo tive styling, and I often refer to your back issues for this and other information. I am a college graduate but have no formal training



in the field of art. With no training in line, color or media, I consider my renderings crude, but I have seen my ideas appear on production models through the years.

Enclosed is one of my less radical creations. Certain concepts have been sprinkled on 1957 production autos; this fact and your Trend Automotive book *Dream Cars* prompted me to send these drawings to your magazine. Vicksburg, Mich. **Bristol Shutes**

POST TIME

Dear Sirs

The terminal posts of most automobile storage batteries are marked with plus and minus signs. Sometimes these become obscured by wear, corrosion, dirt, grease, etc., making determination of polarity and proper connections difficult, once the battery has been removed from the car.

If in doubt, and no other means is available, a simple test is to take two pieces of copper wire, connect them to the posts and stick the other ends apart in a piece of peeled potato. A green mark will show up in the vegetable around the positive wire, thus identifying the positive post. Maurice Peacock, Jr Radnor, Pa

GOOF ACKNOWLEDGED

Gentlemen:

MT features in its February issue the three hottest cars for 1957—the Buick Century, the Dodge D-500 and the Oldsmobile Super 88. Was this an oversight or was Daytona Beach wrong about Pontiac?

William Peterson Tuskegee, Ala. -Our faces were red when we completed the Pontiac test (in March) and even redder after Daytona.-Editor

GOVERNED SPEEDING

Gentlemen:

A member of the New Jersey State Government has gone on record in favor of mechanical governors on automobiles. The

thought behind this plan is, of course, to cut down bad accidents and fatalities on the highways. The irony of this plan is the idea in mind of governing the cars to 10 miles per hour over the speed limit. New Jersey has a limit of 60 miles per hour on the Parkway and Turnpike which means holding cars down to a mere 70 miles per hour.

As law abiding and common sense drivers we must be alert to such plans as this and make sure they are not passed without our knowledge.

Charles Van Vliet, Jr.

Rumson, N. J.

FOREIGN CORRESPONDENTS

Gentlemen:

Would any of your readers like to exchange views, news and catalogues with me?

I am employed in this country by a big automobile concern and want to be kept up to date with U. S. trends and ideas. I would like to exchange car badges and the like with enthusiasts over there

R. Penfold England

5 Molesworth Ave. Stoke, Coventry

ORIGINALITY, PROPORTION AND ESTHETICS

Gentlemen

As a 1948 Lincoln Continental owner, I would like to express my appreciation to your Classic Car Editor, Robert Gottlieb, for a fine article on a magnificent job of restoration in the March 1957 issue. Congratulations also to Dr. Smartt and George Hurst.

In the enclosed drawing I attempted to combine dream car freshness with sports car



reality. All too often it appears to me the two do not seem to be on speaking terms with each other.

As a furniture and interior designer I am naturally concerned with originality, proportion and esthetics in general. As a car enthusiast I like to apply as much of this as possible to automobile design in my spare time.

Robert Armstrong

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OPEN LETTERS TO THE MANUFACTURERS-

Gentlemen:

My new 1956 Ford was delivered in disgraceful condition and with a very bad inherent vibration which was extremely pronounced at 45 mph. A Ford factory representative suggested that I drive at 35 or 55 to avoid the vibration point. He informed me that the company be-lieved that over 90 per cent of their cus-tomers were satisfied and the company was not particularly worried about my complaints.

At my prolonged insistence the dealer replaced or worked on nearly every mov-ing part of the car. In one case the wrong ratio rear-end was installed. A new engine assembly at last removed all but a little of the vibration.

My last letter to Ford informed them of this along with some forty-odd other complaints about the car and the dealer. I received another form letter promising action but my dealer denies having heard from the company regarding my case.

E. L. Merrill Salem. Mass.

Gentlemen:

I will offer, gratis, a suggestion to the manufacturers of U.S. automobiles that I think would improve their products: i.e. that they lop about six inches off the forward overhang and about 18 inches off the rear.

The trunk would necessarily be smaller but consider how many more times you park in a tight spot than fill the huge luggage carrier in the back. Add to this a greater cut under for the front wheels to bring the turning circle down to about 36-foot diameter from the present 46-foot. plus a more direct steering ratio. Motoring would be relieved of some of its present-day pains. G. H. Warren

OPEN LETTER-A LA 1962

New York

Dear Sirs:

I have had my 1962 Forkedtrack three months now and find a few things to complain about for which I earnestly submit recommendations.

First of all I consider the 750-horsepower extremely inadequate to safely compete with the cars of today. This in-sufficient horsepower will only allow an increase of from 60 miles an hour to 100 miles an hour in one second.

My car is a four-door sedan which I consider a family car. It is 36 inches high and I find it a bit awkward to ingress and egress. Personally I don't find it too hard to get down on my hands and knees to enter but my wife, nag that she is, does complain about her ruined hosiery.

I have one of the conservative mid-range models which is only 28 feet long overall and weighs only 8,200 pounds. We do feel that there is some shortage in the knee-room department. Doing away with the steering wheel and driving by push button has certainly allowed for the knees

to be folded up nicely just under the chin.

As for the new three-inch wheels, I think the designers should have stopped when they reached the seven-inch stage. My car is so low that I am forever attempting to go under semi-trailers believ-ing them to be underpasses.

At first I managed to get a reasonable four miles to the gallon of gas and I did not consider this bad since 180 octane gasoline is only 92 cents a gallon in my locality. Now, for some unexplained reason, I am getting only one mile to the gallon. What's wrong with my car? M/Sgt Harve McClung Frankfurt, Germany

one swift. silent rush'

"The gears are completely silent, and the acceleration is tremendous. About 65 m.p.h. in second, and nearly 100 in third gear, were attained in one swift, silent rush."

-John Bolster, AUTOSPORT

"It is a comfortable car to drive for long distances." "Up a grade it keeps going faster and faster, with plenty of power to spare." "Everything is leather covered, to an almost ridiculous degree." "Vision is exceptional in all directions."

-Walt Woron, MOTOR TREND

"...there is now available for delivery a car which combines a good example of European styling with a hefty U.S. V-8, and-most important-one which can wow the local peasantry in forty-eight states without that haunting fear of being stranded for lack of parts or service."

-John Bond, ROAD & TRACK



THE FACEL VEGA SPORTS COUPE

\$7950 at port of entry, including power steering and power windows; chrome wire wheels; 2-speaker radio, and more. Tax and license the only extras.

This lithe and quietly beautiful machine is powered with a Chrysler Typhoon. The engine delivers sufficient torque to move the Facel Vega from 0 to 60 in well under ten seconds. European and American experts judge such performance as rather more than adequate, considering that uncompromisingly rugged construction gives the Facel Vega a curb weight of nearly two tons.

NOTES FOR GENTLEWOMEN: You can have your Facel Vega with glove-soft, pliable interior leathers and specially-made fabrics in your colors. Luxury is combined with the practical aspects of: great visibility, ahort-wheelbase parking convenience, and all controls truly at your fingertips. No other motorcar in the world, regardless of price, evidences more attention to interior and exterior details.

SPECIFICATION HIGHLIGHTS

ENGINE: Chrysler Typhoon V-8, 255 H.P., installed in Paris by Facel Vega. Carburetor...4-barrel with twin oil-bath air cleaners.

TRANSMISSION: Automatic push-button operated, or

REAR AXLE: Conventional. 3.31 to 1 ratio.

CHASSIS: Facel, Frame of 4inch steel welded tubes. Front suspension: independent coil springs. Rear suspension: normal semi-elliptic. Steering: Gemmer cam and roller, power-assisted. Brakes: Hydraulic power-assisted. Aluminum drums with cooling fins and air scoops.

BODY: Facel. Pressed steel, hand-worked. Stainless steel exterior trim. Seats: 2 separate adjustable front seats with arm rests. 2 smaller rear seats.

DIMENSIONS: Wheelbase 8 ft. 7 in. Overall length 14 ft. 11 in. Overall height 4 ft. 4 in. Ground clearance 7 in. Weight 3950 lbs.

PERFORMANCE: Ton speed 120+



for the few who always want the finest

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IT'S DREAM CAR TIME AGAIN

REAM CAR SEASON, with its glitter and dash, dawned when FoMoCo's X-1000 started its cross-country tour with a two-week spell of spellbinding

on display in American Airlines' offices in Rockefeller Center in Bagdad-On-Hudson. Don't get excited, though, for the X-1000 is only a 3/8 scale non-operating model and not a full-

sized car for 1958.

VICE-PRESIDENT and Director of Styling George

Walker says that by Joe H. Wherry the model is Detroit Editor "not a dream car in the true sense.

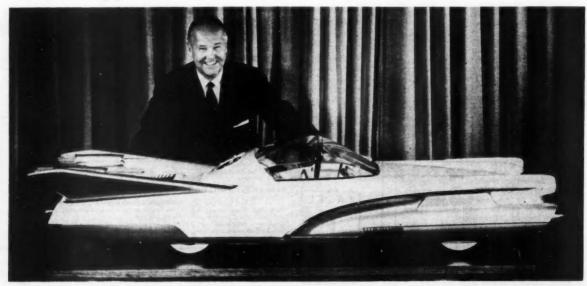
since many of its styling and engineering features are entirely feasible." Gad! Mr. Walker goes on to say that "several of these features already are being considered . . . in our new cars."

SOME OUTSTANDING features of the X-1000 are, quoting FoMoCo's Styling Office: "supersonic aeronautical design" "aircraft-type bubble canopy"-"delta-shaped 'floating' fins"-"suspended iet-pod fenders"-etc.

MORE PRACTICAL than the tremendous overhang fore and aft brought on by the extreme futuristic styling are a couple of mechanical features modelled into the car: air-cooled oil coolers on the front fenders (these appear to be immediately below the headlight-note small grille in photo), an aftercooler on the rear deck and the exhaust diffuser. I'm not quite clear as to the function of the parallelogram above the front wheels but it looks like a venturi to 1) provide upper wheel space and 2) to possibly function as a front brake cooling air scoop. The grille work low and just aft of the front wheels looks like some sort of exhaust.

LINCOLN'S new assembly plant at Novi, Michigan will be operating as you read this. And they'll soon begin turning out 1958 models with the capacity to produce 112,000 cars annually without the necessity for overtime. We understand (but cannot say for certain) that the new Continental will also be produced at Novi. (See "Rumor Mill.")

MORE HORSEPOWER, noticeably greater size but no increase in performance will characterize the 1958 Lincoln. But, '58 will see Lincoln advance farther along the prestige line trail than heretofore. The new model will debut to the public very early in the fall. It will be ultra-modern but not to the extremes of fanciful design which have been rumored. I understand that the Lincoln line will be expanded, and that, in comparison to most new cars, it will be conservatively-radical, if you can imagine such a situation.



GEORGE W. WALKER, Ford vice president and director of styling, says X-1000 has many feasible fea-

tures. Advertising fraternity could have a ball-car has suspended, jet-pod fenders; delta shaped fins.



THIS BROOKS STEVENS 1951 rear-engine-design car featured torsion bar suspension, light weight, super-

charged engine, and a retractable hard top which formed a second shell over engine compartment.

MR. BROOKS STEVENS, crack industrial designer, recently presented a paper before a Detroit meeting of the Society of Automotive Engineers, in which he outlined his views on the development of rear-engined cars. We quote him in part as follows:

id one id

n

- . . NOW LET'S TAKE A LOOK at the design and styling of the rear-engined American car . . . if and when. I, for one, firmly believe that the appearance design of the car should be and will be transitional. We know from other bitter experiences that to go all the way, so to speak, in one revolutionary change is not acceptable to the American public. The automobile industry depends heavily upon the used car situation and its economic soundness to entice the buyer whom we hope will want to "keep up with the Joneses" to buy the newest offerings. If a 19XY model were to completely outmode in overall concept and appearance its more immediate predecessors, their trade-in value would diminish to the point where the mass buyer could not afford the innovation.
- "I FEEL that the transitional appearance will, in a sense, be determined by the seating plan and general body architecture. The cradling of the passengers virtually within the center of the wheelbase will mean that there will be some appearance of a hood or nose and fender-like enclosures beyond the windshield point. The fact that this can be luggage area and that radiator grilles will not be a functional necessity means that this area can be depressed and infinitely better from a vision standpoint.

- Even in the low car of tomorrow a line from the driver's eye over the forward sheet metal to the ground will arrive at a closer point from the front of the vehicle than in present day cars.
- "I BELIEVE that we will perpetuate three basic types of rear-engined automobiles of the future, or convertible versions thereof—namely, the boulevard sporty look, the functional family sedan, and the utility or station wagon concept. It is entirely possible that the second and third versions will by this time have merged into one basic tooling program and acceptance standard."
- A NEW FUEL-INJECTION SYSTEM has been announced by the Marvel-Schebler Division of Borg-Warner. This is a timed system which incorporates a unique injection pump design. (See sketches on next page).
- THE HEART of the injection pump is the pumping and distributing plunger assembly, along with the three elements that make up an assembly for four-, six-, or eight-cylinder engines. This plunger assembly does the pumping, distributing and metering of gasoline as required by the engine. The plunger is driven at camshaft speed and the plunger reciprocation, or pumping motion, is obtained by rotation of a cam face contacting a roller. For an eight-cylinder engine the cam has eight lobes.
- DISTRIBUTION of the metered quantities of fuel is obtained by plunger rotation with the discharge port in the plunger connecting with a port in the

- plunger body as the plunger moves up on the cam lobe. On the down stroke of the plunger, inlet ports connecting to the plunger pumping chamber connect with ports in the plunger body leading to the fuel reservoir, and plunger chamber is filled during this down stroke.
- THE AMOUNT OF FUEL discharged during the following pumping stroke depends on the angular position of the fuel metering valve in relation to the plunger. At the closed throttle, or idle fuel cut-off position, a passage in the fuel metering valve connects with ports in plunger and plunger body during the full pumping stroke, and the fuel in the plunger chamber is spilled back to the fuel reservoir rather than through a discharge outlet leading to an atomizing nozzle.
- THE ANGULAR POSITION of the fuel metering valve is controlled by the air throttle which meters the air flowing to the engine cylinders, and by manifold vacuum pressure control, establishes the proper position of the fuel metering valve so that the pumping and distributing plunger will discharge to each cylinder the amount of gasoline needed for the correct fuel-air mixture.
- PUMP DELIVERY is matched to engine air requirements by manifold pressure. The fuel valve which controls the injection pump delivery is rotated by movement of a cam, which is actuated by a bellows controlled by manifold pressure. The cam is supported on a movable track and this track position is altered through bellows and aneroids to provide for speed, temperature and

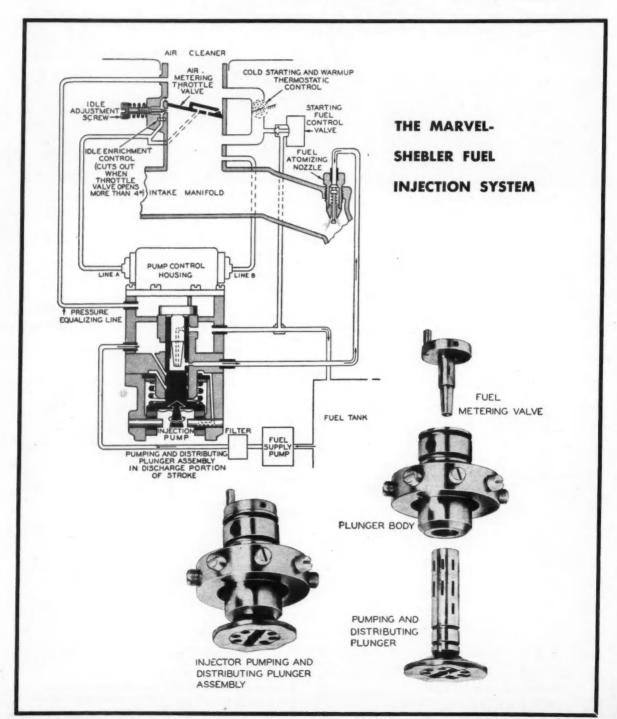


altitude compensation. Speed compensation control is obtained by mass air flow measurement across throttle valve.

THE MANUFACTURER claims their timed injection system gives a smooth engine idle and also improves engine response to throttle opening without an excessively rich fuel air mixture so that good engine performance is obtained

over the wide range of speeds and loads under which the automotive engine operates with maximum fuel economy.

THEY ALSO CLAIM that in high production quantities the cost of this injection system may not be more than the cost of two four-barrel carburetors, and when properly calibrated and the engine modified for most efficient use of



fuel injection, the system will provide sufficient fuel economy to quickly offset any added cost.

A "POWER-KIT" which provides a seven per cent increase in the horsepower of Rambler V8 models has been announced by American Motors Corporation. The factory-installed option boosts the horsepower of the V8 powerplant from the standard 190 to 203. The kit, which is priced at \$29.50, consists of a four-barrel carburetor, a special intake manifold and an oil-bath cleaner.

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THOSE WHO HAVE BEEN WAIT-

ING with bated breath and bulging pocketbooks will be interested in the recently announced, factory-suggested, delivery price of the Cadillac Eldorado Brougham. As could be expected, such features as stainless steel roof, airsuspension, and a full complement of power-operated conveniences, cost money. For a mere \$13,704, including federal excise tax, you can negotiate for one of these limited-production beauties. Added to the price will be transportation charges, and state and local



TOP CAR in Cadillac luxury line, Eldorado Brougham.



This new feature is aimed at presenting your ideas for conveniences and necessities which manufacturers could provide to increase your motoring pleasure. If they are judged practical and feasible, we will be pleased to send you a free one-year subscription to MOTOR TREND for each item published.-Editor.

Provide light-proof window shades for wagons so campers, swimmers, etc., could sleep or dress inside in privacy?

Design a litter bag holder for the dash panel or rear of the front seat which will conceal the bag and be provided with a hinged cover?

Develop an air-conditioning system to sell within the price range of a good heater?

Put concealed-lock, child-proof, inside door handles on rear doors of four-door models?

MAKE YOUR PLYMOUTH **GO LIKE A FURY!**

NOW! GET 40 MORE HORSEPOWER

from your Plymouth V-8 ('56 or '57) with a Plymouth-engineered, Plymouth-built kit! Easy-to-install parts make your Plymouth a real bomb on the strip-like the Fury.

Get these extras at any Plymouth dealer or your favorite speed shop: Dual quads, intake manifold, hot cam, tappets, air cleaners, plus necessary linkage, gaskets and fittings. They're factory parts, so you can still compete in the stock classes.

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Gives you 50% more horsepower, faster acceleration, more speed and better con-

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Lively All New Hillman



Out-performs many sport roadsters

In Europe's racing circles, the British-built '57 Hillman Sports Convertible is known as the comfortable four-seater that can out-pace many competition-type roadsters. Hillman's spirited new ohv engine unleashes record power for surging acceleration and flashing speed, yet delivers up to 35 miles per gallon. Ball-joint front suspension, telescopic shocks and unitary construction assure rugged endurance and combine with ultra-precise steering for hair-trigger maneuverability.

This exciting car says, "Let's go," not to one or two people, but to the whole family, yet costs \$1,000 less than U.S. models.



Smart, family-big sedan



Double-duty Hillman Husky

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Rootes Motors, Inc., 505 Park Avenue, New York 22, N. Y., 9830 W. Pico, Los Angeles 35, Calif.

car owner's



LIBRARY

THE WORLD'S AUTOMOBILES

A record of 75 years of car building by G. R. Doyle

Published by Temple Press Ltd., Bowling Green Lane, London, E.C.1. 15 shillings.

The first thumbing-through of this book will give you an interesting surprise. Listed in alphabetical order on its pages are almost 4000 automobiles along with their manufacture dates and country of origin.

ture dates and country of origin.

In the astounding 163 pages of this cloth-bound volume, you will find footnotes and other addenda which furnish information on cars using no less than 11 different propulsion systems, ranging from gasoline engines to clockwork. You will re-discover long-forgotten cars and their fascinating details. Listed as such are the Enger of 1909-1917 which could be switched at will to either six- or 12-cylinder operation; the Birmingham of 1921-1922, which had four-wheel independent suspension; and the Ariel of 1906 which ran air-cooled in winter and water-cooled in summer.

This is an excellent and most complete reference work.

—R.S.

Rand McNally ROAD ATLAS United States Canada Mexico

Published by Rand McNally & Co., P.O. Box 7600, Chicago 80. Regular edition \$1.75; deluxe edition \$3.50.

This excellent atlas contains 118 pages of completely new and up-to-date maps showing all state and U.S. highways, principal county and local roads, cities and towns, mileage distances, state and national parks, campsites, airports, points of interest, rivers and lakes. There are 147 city maps.

Roads are classified to indicate both free and toll expressways, two- and four-lane highways, secondary roads and the type of surfacing on each. Turnpikes, both under construction and proposed, are also shown. Many vacationists will be interested in the

Many vacationists will be interested in the 15 special maps of national parks; others in maps of the Alaska highway, Central America or the Black Hills region.

This publication will prove a valuable aid in planning any trip or vacation and as a guide on motor travels. You will also find it pleasant assistance if your travels are only of the armchair variety.

—R.S.

FACTS ABOUT STORAGE BATTERIES

A Manual for Car, Tractor and Boat Owners

Published by Dept. No. 13, Exide Automotive Division, The Electric Storage Battery Co., P.O. Box 8109, Philadelphia 1. 10c.

This 31-page manual tells the car owner how to care for his battery, how to get the most from it, how to test, recharge, install and remove it. The booklet also contains an unusual and simply written explanation of how a storage battery is made and what it does. Here is a lot of useful information.

-R.S.



The editors of MOTOR TREND had this to say in the May issue: "When we had completed our thorough test...we were completely convinced that all the Chrysler Corporation products were deserving of the highest praise that MOTOR TREND could bestow."

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Behind this praise - behind this award - is Chrysler Corporation's new TORSION-AIRE suspension system, standard on all 5 cars. Try it. See how it levels out the roughest roads, keeps even keel on tightest turns, lets you put on the brakes without front-end dive.

CHRYSLER CORPORATION > THE FORWARD LOOK



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10915-E 5. Eberhart Avenue
Chicago 28, Illinois

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"The '58 Plymouth will have an engine that will make the Fury slow by comparison."

TRUE—Our sources say that the new Plymouth is going to be an all-out bomb, and we don't mean in its racing form.

"Mercury will have full air suspension system in '58."

POSSIBLE—But we cannot swear to this as a fact. However, since an air-filled doughnut is currently housing the forward trunion mounting of the rear springs on some models, progress toward full air suspension system is certainly indicated. Therefore, it is logical to assume that FoMoCo's Mercury Division will press on to this goal—and we'll personally be surprised if the Big M doesn't ride on air in '58.

"Fuel injection is slated to be optional equipment on a six-cylinder '58 car."

TRUE—F.I. is currently so slated on a well known economy, full-sized, six-passenger car; economics will dictate whether the slate appears as current ambitions and intelligence reports have it.

"The famed Riley car will again be imported."

VERY POSSIBLE—In fact, most likely. Though not generally imported for several years, this marque, beloved by many enthusiasts, is now high on the "want list" of many dealers. This reflects a certain consumer desire which, when deemed sufficiently strong, will bring the Riley back, and probably soon.

"The Volvo Sports is all washed up."

TRUE—But by all washed up the manufacturers simply mean that there is no longer any foreseeable possibility of bringing it into the USA. Volvo people tell us that not only is the car no longer under development, but that production has ceased altogether. Nor will the new and desirable Amazon sedan be imported into the USA for at least a year. The PV-444 sedan is now a back order affair and since the Duett Station Wagon has suddenly started to sell, the firm has all it can do filling those orders without compounding problems with a plastic-bodied sports car that would have to sell for around a too-high four-grand figure.

"Chevrolet engineering is thoroughly

soured due to the Corvette "SS" failure at Sebring."

FALSE—Despite misleading statements from some quarters attributing the car's retirement after some 20 laps to so-called mechanical failure, development will now go on at an even increased tempo. Chevrolet does not feel the "SS" failed! The truth is, it didn't. What happened was that a tire weakened in practice caused the first pit stop and eventual retirement was due to overly fast wearing of rubber-mounted rear suspension bushings. The latter would have caused poor handling and the need to tour rather than race. The "SS" will come back, rest assured.

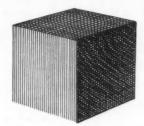
"Steam power is again about to appear in a car you can buy."

TRUE—Even though this does sound wild. We have been personally contacted by the spokesman for a group with engineering ability, with test cars already on the road, and with that most important ingredient of all, money. Not only are several new steam units currently operating under actual road conditions, but styling of the body is proceeding and a chassis has already been engineered, built, and approved. We shall have more news on this steam development very soon!

"American Motors is preparing another special or sports-type car for sale."

FALSE—This rumor arises for two reasons: the beautifully executed Rambler Palm Beach by Pinin Farina is now in this country, and, AMC has a reputation for the dramatic in the face of adversity. In the case of the Palm Beach, the car is of definite importance as you shall learn shortly through MT. As for AMC's introduction of such items as the Nash-Healey and the more recent Metropolitan, you can expect equally dramatic news from this rugged independent before your next New Year's Eve party. This news will be more practical than the N-H and just as interesting as the Metro.

"There will be no 1958 Continental." FALSE—As near as we can get the story, here's what will happen next year. The Continental, as we know it today, will be discontinued. In its place will be a higher-priced (by a few hundred dollars) version of the Lincoln Premiere, with a different grille and a few other minor trim changes. This will be known as the '58 Continental.



Chevy attains the engineer's dream...

1 H.P. PER CUBIC INCH

Every competitive field has certain magic milestones. In track, the four-minute mile. In aviation, the sound barrier. In mountain climbing, the ascent of Everest . . . and so on.

In American automobile engineering, the magic milestone is this: one horsepower from every cubic inch of engine displacement! Chevrolet is the first American production car to achieve this goal; from our 283-cubic-inch V8, with fuel injection* and 10.5 to 1 compression ratio, we

pull 283 h.p. Naturally, we're proud. Because this is proof, in cold figures, of the extra efficiency of Chevrolet's advanced valve gear, free-breathing manifolding and ultra-short stroke. Better still, it is the warranty of superior engineering in every phase of the car's performance—road-holding, suspension, steering, braking and economy. The real reasons why you get more to be proud of in a Chevrolet—always!
... Chevrolet Division of General Motors, Detroit 2, Michigan.



*Optional at extra cost



Now...you're 'set' for SAFER travel ...thanks to ATOMIC ENERGY

A MATCHED SET of Dunlop AccuRated tires is your greatest protection against premature tire failure. The precise, atomic-powered action of AccuRay® produces a stronger, safer tire with an exact amount of protective rubber uniformly applied to every cord ply. No dangerous ply chafing or internal heat build-up. Better balance, new stability and comfort for mile after mile of safer driving.

Your Dunlop dealer will give you the "inside story" that makes Dunlop your best tire value today. He has a complete selection of Dunlop tires in Nylon or Super Hi-Test Rayon.



Dunlop's Accuracy Process—Electrons, emitted from an Atomic Isotope, scan sheets of coated tire cord, controlling uniform application of select insulating rubber within precise tolerances of ±.001 inch.



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P. S. Golfers — you'll never know how good you are until you play a Dunlop ball.

INGENUITY SAVES A LIFE

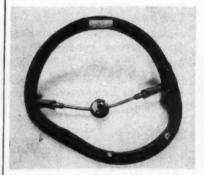
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FOUR YEARS AGO, Arthur V. Wilson of Waterloo, Iowa, became very annoyed because his wool gloves (worn out of necessity because of the rigorous Iowa winter) made his grip on a plastic-rimmed steering wheel feel insecure. Little did he know that his annoyance would probably some day save his life.

Being a man of action, Mr. Wilson set out to build a new steering wheel for his 1953 Oldsmobile. The hub and spokes were to be constructed along more or less conventional lines; the big difference would be in the rim.

Casting about for a non-skid rim, Wilson's eye hit on a piece of vacuum cleaner hose. It had a fine non-skid surface but was of course much too flabby to function as a rim. This was solved by stuffing the inside of the hose with an English bicycle inner tube, then taping the whole works to a secondary steel rim which was attached to the spokes.



The thing worked fine. The inner tube was inflated until the rim was firm and comfort-able to the touch. It wasn't cold on the hands, and it had a sure, non-skid feel.

Two years later Mr. Wilson and his wife were involved in a terrible and tragic accident. Trapped on a narrow bridge at a standstill, they were struck head-on by another can traveling 65 mph. Both were gravely injured, Mrs. Wilson the more seriously. Mr. Wilson is thoroughly convinced that the gradual and partial collapse of the wheel plus the initial cushioning effect of the soft rim was responsible for saving him from more serious injury and perhaps death.

A patent is now pending on an improved and finished version of the wheel. Both U.S. and foreign manufacturers have shown interest in the device.

—R.C.S.



"This sort of thing just doesn't happen . . ."

Here it comes!...You're cruising along at 80 in Overdrive...Secure and confident with Triumph's big new Girling disc-type brakes*...hands lightly on wheel...then you spot it-a swinging, horseshoe curve ahead.

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Touch the Overdrive button . . . you're in fourth. Touch the clutch and gear-lever for a split-second downshift to third. Your "tac" says you're reving up to 4,500 rpm...your speedometer is down to 60...your exhaust "screams" like a racer's mating call . . . you're ready to take the curve "Triumphantly."

Round you go...foot on accelerator...hugging the road as safely and securely as ever. Your rear mirror shows your squealing, braking compatriots lagging way behind ... but you've already shifted up to fourth and zoomed onto the straightaway.

What a thrill . . . your first turn in a Triumph! From now on there'll be no turning back!

\$2625. plus tax and license at U.S. ports of entry. (Slightly higher West Coast ports.) Wire wheels, hard-top, rear seat and overdrive optional extra

SPECIFICATIONS:

BRAKES: Girling disc brakes on front wheels*

TOP SPEED: 110 MPH MILEAGE: up to 35 MPG

ENGINE: 4 cyl. (OHV) 1991 cc

OUTPUT: 100 BHP

ACCELERATION: 0-50 in 8 sec.

MAINTENANCE: Parts and service available coast to coast! Free Brochure and dealer list on request.

Write now-for fun! *A Triumph-plus . . . as standard equipment.

STANDARD-TRIUMPH MOTOR COMPANY, INC., Dept.







THE INSTALLATION of seat belts as essential safety devices in automobiles has suddenly come into prominence, with one car manufacturer featuring them as a safety addition to the vehicle; the device, however, now is conspicuous by its absence in 1957.

Considerable thought has been given to the method of installation and construction of the components of seat belt assemblies, most of which have been related to mechanical function rather than to the merits of the device itself. Even commercial interest flourished, including the establishment of a Seat Belt Institute (now almost extinct). A potential existing market of 60 million or more installations of seat belts at \$10-plus each would stir the interest of any progressive organization, with further stimulation by six million new vehicles being produced each year.

Some insurance companies have offered premium reductions to those motorists who would install seat belts, and such reductions were justified by the companies by stating that lives would be saved and injuries reduced or prevented. A survey of 53 insurance groups, by Motor Vehicle Research, revealed that advocation of seat belts was based on the fact "that air lines used them for years and that some studies indicated they were effective for use in automobiles." Several insurance firms accused their competitors of using seat belts as a means of luring customers by means of rate reduction.

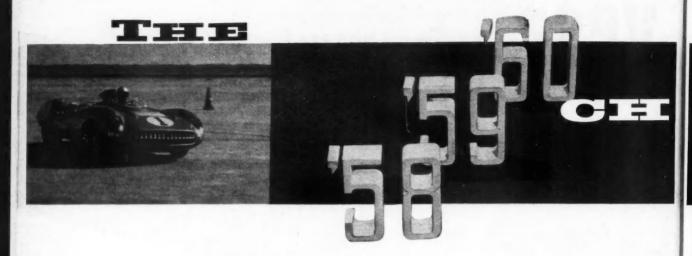
Legislative action became popular, some of which was aimed at providing a law that all cars be equipped at the factory with anchor points for belt installations. Some actions required seat belts to be installed before registration would be granted. These actions have subsided to a large degree with no laws enacted by any state concerning seat belts.

Whatever the reason, the author is concerned with the safety features of seat belts and not the commercial aspects. The primary approach can be based on comparison. Life jackets, to be correctly worn and of a regulation type, are required by law as part of life-saving equipment on ocean liners and other seagoing craft. Such action on part of maritime officials has resulted in the saving of many lives in sea disasters. The effectiveness of the device was proven beforehand in actual use tests by humans before the regulations were adopted. The analogy between life jackets and seat belts is close, both claiming the



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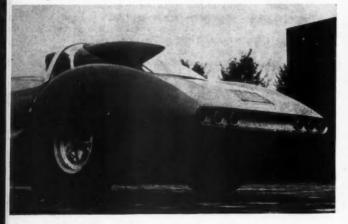


Will the Super Sports Corvette Influence Chevrolet Design in the Future?

March of 1957 was a significant month for American motorists. It marked the entrance of the U.S. auto industry into the field of first-line, high-performance road machinery—for the "Super Sports" Chevrolet which appeared at Sebring is a real car, with no need to hedge or qualify. Certain sports writers have dismissed the SS as unsuccessful, in view of its tentative behavior in the race itself, but no one who knows cars can take that view—it always takes a while to "de-bug" a new design.

For those who haven't already "digested" the SS, a brief description of it may be helpful. The car should not really be called a Corvette, for it is about as much like a production Corvette as the latter is like a Chevrolet utility car. That is, it has a somewhat hotter version of the same engine—otherwise nothing is the same. This, of course, is the relationship that exists between the D-Jaguar and the XK-140.

RACING CORVETTE has unusual but functional tail design.



The SS Chevrolet has a space frame, a magnesium body, magnesium disc wheels, de Dion rear suspension with inboard brakes, and weighs 1000 pounds less than a production Corvette. It resembles the production car only in the general aspect of the grille and the rather irrelevant, dished-in side panel. It is a much smaller car overall and has a lithe, compact feel totally unlike that of the Fiberglas car currently available.

As is now history, Fangio and Moss both broke the existing lap record on the Sebring circuit the first time they took the car out. While those lap times were immediately surpassed (slightly) by the very best drivers in the very best machinery, the fact that they were set is conclusive proof that the SS is America's first serious road car since the DV-32 Stutz.

Moss' observations were very interesting. He remarked that the car performed just opposite from what he expected. He was prepared for terrific speed and clumsy handling. What he actually encountered was brilliant handling (with certain reservations about the steering), but speed and acceleration which he considered merely adequate. "Now if you'd just replace that 'cooking' engine with a real racing unit," he said, "you'd have a car second to none in the world."

And this is very likely the next step. The Sebring crew were all aware that a four-cam, desmodromic version of the 283-inch V8 is under development in Detroit. The factory view that the standard engine would prove adequate was either naive or just overly impressed by local contest records. You don't enter bigtime competition with push-rods!

Exciting as the SS is to the road racing enthusiasts, speculation as to how it will affect the ordinary motorist is of interest to a much larger group. The half-century-old policy of Daimler-Benz has always stressed the application of their competition experience to the improvement of their utility automobiles. There is no question but what "racing improves the breed," but U.S. marques have got along without it up to now. Is it possible that they (or at least Chevrolet) have really embarked on a new program in which real, rather than advertised, quality will play a part?

The SS is a far cry from a Chevrolet. The only thing they have in common now will probably soon be superseded. What then,



by Jeff Cooper

does the Chevrolet buyer stand to gain from the SS? Principally, I believe, he may profit by radical improvements in chassis design. No non-racing driver can use anything like the blistering speed of the SS, even with the pushrod engine, but domestic utility chassis and brakes are pretty bad, and it may be that the SS will point the way to improvements which can be applied to standard cars without unacceptable production costs.

Some of the advanced features of the SS may well be applied to the production Corvette in the future, especially the brakes and gearbox. The de Dion rear suspension would also be a huge improvement, but might run the cost up \$1000 or more. If the "super" engine is produced, it will probably be made available in the production Corvette, but there are arguments against this. It would have to be quite a bit more expensive, and in a production chassis its power would be of very little use except at the

top end of the speed range, which should be well over 100 mph.

Whether the SS will be produced for sale is a question which has not yet been decided. Most observers feel that it could not be marketed for less than \$10,000-\$12,000, but the Sebring crew stated that it was planned to cost \$6000, when, as and if.

A champion sports-race car for \$6000 would be a tremendous bargain—the winning Maserati at Sebring runs between two and three times that figure—but whether there is an American market for sports-race cars large enough to tool up for is doubtful, especially by Detroit standards.

Whatever the outcome, no American sports motorist can avoid a thrill at the thought of Chevrolet's SS. Its gorgeous, metallicblue sheen and authoritative crack as it took the road at Sebring were what we have longed for all these years. We always said the U.S. could do it—it looks like we at last have proof!

BOTH THE SS AND DRIVER Pierro Taruffi have a purposeful look in Sebring race.

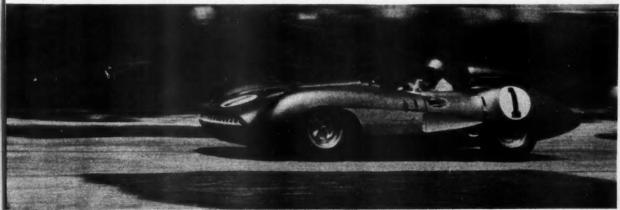


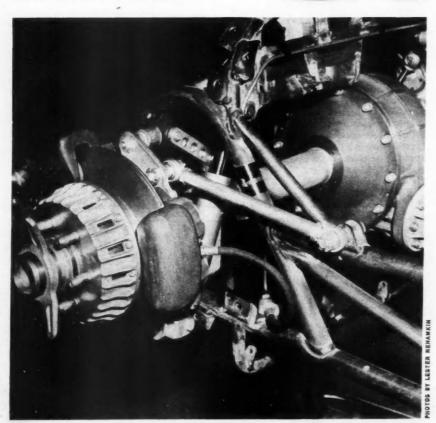
PHOTO BY JEFF COOPER



FAR IN ADVANCE of the first practice runs, we are sticking our necks out with the prediction that the new flock of Indy bombs will be faster than last year's squadron. Engines this year are limited to 256 cubic-inches unblown and 171 blown. This reduction of only 18 and 12 inches, respectively, will probably be offset by the reduced size and weight of the new cars. Proof lies with the timers.

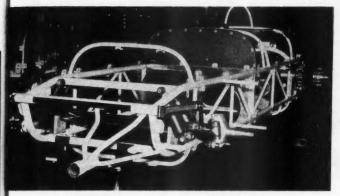
and builder George Salih have car with lowest center of gravity. Distance from ground to hood top is only 21 inches. Weight, less driver Sam Hanks and fuel, is about 1650 pounds. Ground clearance is exactly four inches.

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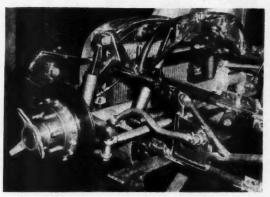


ROBBINS SPECIAL built by Frank Kurtis has extra set of spot disc brakes in rear. Dual set at forward edge of disc is for regular use; single set for emergency. Halibrand design. Spots have separate master cylinders.

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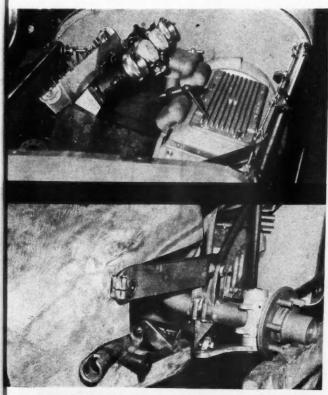
THE JOHN ZINK SPECIAL weighs only 1595 pounds and probably is lightest car in race. Troy Ruttman will drive.



ROBBINS SPECIAL has double steering arms. Design eliminates interference between tie rod, frame.

SHORTER, LOWER, LIGHTER MAY MEAN NEW RECORDS WITH SMALLER ENGINES

INDIANAPOLIS



ENGINE IN BELOND CAR is mounted almost flat. Starter tube position on Roger Wolcott Special gives clue to the engine offset 18 degrees to place greater weight on left side.



A. J. WATSON, builder of new John Zink Special fits a Fiberglas tail. Entire body weighs 64 pounds. Hood is aluminum; rest magnesium.

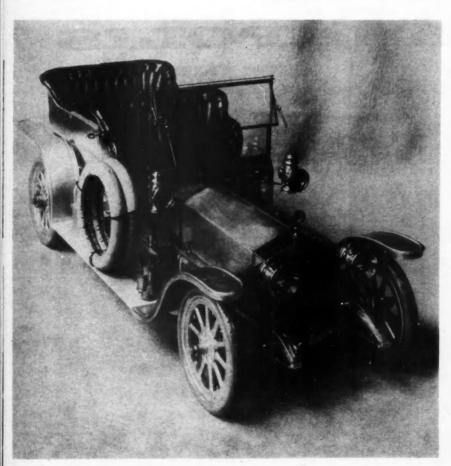


Conducted by Robert J. Gottlieb
Classic Car Editor

A PICTORIAL PARADE OF GREAT OLD CARS

LOCOMOBILE ROADSTER, circa 1921, had big six-cylinder engine with 4½-inch bore and 5½-inch stroke which displaced 525 cubic inches. The T-head cylinders were cast in pairs and mounted on a bronze crankcase. Wheelbase was 142 inches; transmission had four forward speads. Original had two spares. Third spare and hood window are unfortunate modifications.





Rolls-Royce Silver Ghost

WE'LL BET that you are fooled into thinking this is a 1907 Rolls-Royce. It isn't. But it is the most detailed and exquisite automobile model ever constructed. Built on a one-quarter scale, it has been on exhibition in the automobile hall of the Smithsonian Institution in Washington, D.C. since 1940. The factory loaned it for display at the New York World's Fair. War conditions precluded its return and in 1947 the loan was converted into a gift. It is patterned after the world renowned Silver Ghost touring car that became famous in 1907 after a 15,000-mile test conducted by the Royal Automobile Club.

Though the model won't run, many components will operate. Take the clutch, as an example. Depress the clutch pedal while the flywheel is rotated by hand; the clutch cone goes forward within the flywheel, and stops rotating.

Other beautifully detailed parts of the model are the instruments and controls, lamps and external engine accessories. The model is painted aluminum and is upholstered with genuine green leather.

Two identical models were built by the factory after the famous 15,000-mile road test. You undoubtedly remember that after the test, the Silver Ghost was completely disassembled and all parts showing the slightest wear, replaced. The total bill for parts amounted to slightly more than \$10. The only trouble (aside from tire trouble) occurred when the gasoline shutoff valve accidentally jarred closed.

The other model is believed to be on exhibition in the Science Museum in South Kensington, England. The original car is in the private collection of Stanley E. Sears, also in England.

-Smith Hempstone Oliver

GOTTLIEB BENZ achieved so much success with his horseless carriages that many firms obtained the privilege of building the marque under license. One of the best known licensees was Austro-Daimler Puchwerke A.G. of Vienna. Carbon copies of

the German cars were built until 1906 when the Austrian firm decided to proceed along more original lines.

The 1913 model shown here is known as a Prince Henry. It acquired its name as a result of Austro-Daimler successes in the 1910 Prince Henry Trials which required endurance, handling and dependability as well as speed. Prototypes were built with competition in mind and the 'sportster' resulted in the Austrian counterpart of America's Mercer.

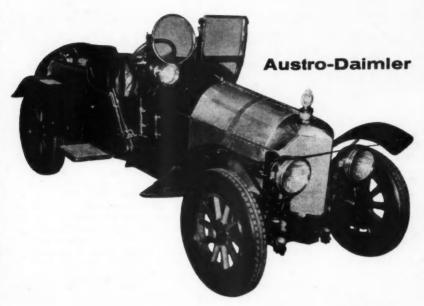
If you'll look closely, you will see that the car could carry three passengers. A monocle windscreen protected the driver; the front seat passenger was protected by a square, laterally divided windshield. The third passenger sat in the single rear seat, surrounded by two built-in tool containers. In an early attempt at streamlining, the tail section was torpedo shaped. In line with the practice of the day, all external accessories were made of brass.

The polished aluminum hood is held in place by spring-loaded clamps and a wide leather belt. Underneath it are four huge separately cast cylinders featuring domeshaped combustion chambers. In line with European practice, horsepower is rated less (27) than the engine actually develops.

Ignition is sparked by a magneto; other he-man features are the huge grease cups, solid front axle, longitudinal leaf springs and vertically hung tubular shock absorbers. Longitudinal leaf springs support the boat-tailed rear in conjunction with oversevere telescopic shocks.

The car was originally sold in the USA by Healy, the American distributor. It now reposes in the Thompson Products Company Museum in Cleveland, Ohio.

-Joe Wherry







MOTOR TREND/JUNE 1957 25



KURTIS

by George E. Jones

"This humble son of a Czech blacksmith builds more (some say better) race cars than anyone else in the world."

FRANK KURTIS decided that he wanted to be a race car builder when he was only 12 years old. That was the year he saw his first race—in which Ralph DePalma, tooling a Miller Special, won the 100-lap race at the old Ascot Speedway in Los Angeles.

Today, at 48, this humble son of a Czech blacksmith is the largest (some say the best) builder of race cars in the world. Kurtis, whose Indianapolis-sized roadsters, sprint cars, competition roadsters and standard midgets have pumped 400-odd records into the books, has lapped the field the hard way, without the blessings of either education, financing or an engineering degree.

It is largely at Indianapolis—the premier speed classic of America—that Kurtis-Kraft mounts have all but obliterated competition. Here, his creations have dominated the field more often than any others in recent racing history. Approximately 90 per cent of the starting cars at the Brickyard each Memorial Day bear the Kurtis brand, recognizable by their broad, low snouts, rakish streamlining—and terrific bursts of speed. The fabulous success of these California-bred roadsters, parlayed with the 270-cubic-inch 360-horsepower Meyer and Drake Offenhauser powerplant, has been money in the sock for the owners who can lay \$20,000 to \$50,000 on the barrelhead for these masterpieces in metal.

If you were to ask Kurtis why his cars have such a throttlehold on the record books, he will tell you something like this: "Suspension and balance does it for us. They corner better, ride easier, handle easier." Then he smiles slyly. "We have a few little mechanical refinements that pay off, too. Put in a red-hot pilot and it's up to him to show the boys the way home."

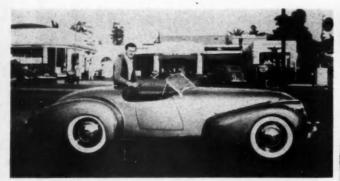
Paul Russo was doing just that in the 1956 race, in the brick-red 500-F Series Kurtis-Novi, rocking the needle for a 142-plus average, until a tire failed at 55 miles. The mishap didn't dampen Russo's enthusiasm for the ill-fated Novi.

"What a tiger that baby is!" he explained back in the pits. "I could have driven it for a month without a whimper."

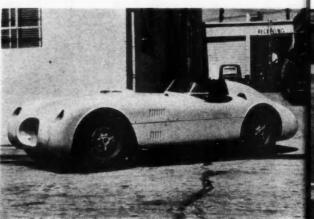
He went on to talk about the mechanical refinements that Kurtis mentioned. Like the broad tread of the mount as it clings to the oil-slick bricks like a suction cup. The fury of acceleration—with Russo barreling down the straights at 185 mph, only to back it off to 130 in order to make the turns. The taloned grip of the huge Halibrand aircraft disc brakes, with twice the usual friction surface, gives the Kurtis its whiplash reflexes.

In its present form, the 500-F series retains the sturdy 4130 steel truss tubular frame, and torsion bar suspension of the Kurtis 3000 series. This was the series that rocketed Kurtis into top position as an Indianapolis car builder. The torsion bars now have been placed below the center of the axles instead of above as on past models, with dual shocks on each axle. This lowers the center of gravity, and gives the demons better roadability.

Conspicuous on the latest Kurtis-Novi was the big tail fin tapering back from the streamliner's headrest. Says Kurtis, "I



ONE OF FRANK'S early experimental roadsters looks like a Jaguar but was built long before the XK was introduced. His competition sports car has done well on the circuits.



EVANS IDENTIFICATIONS

Secretary of the secret

call it a spoiler. Vacuum fills the wake object, and this is also true of a race car." So e designed his streamliner's tail fin partly for style, and partly to spoil the creation of a trailing vacuum.

"Naturally," he points out, "the more a roadster is streamlined, the less we can expect wind resistance to slow it down."

Kurtis' cars first burst into prominence in 1938, and have been spewing fumes into the faces of competitors ever since. That was the year Kurtis turned to designing midgets—the famous Rex Mays model—and wound up with a shop of his own. Mays, already one of the all-time greats in the big-car field, was eager to add the midget crown to his list of achievements.

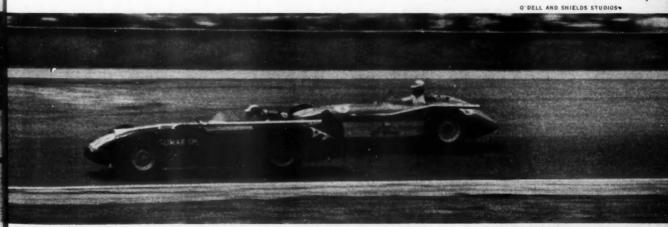
"The Rex Mays midget," explains Kurtis, "was basically conservative in design essentials, but there were important improvements over similar racing cars of that time. By substituting 4130 chrome alloy tubing for the heavier steel ordinarily used in the welded construction of the frame and running gear, we were able to cut the weight considerably. More radical was the use of the soft suspension system, featuring a low spring rate."

Kurtis became king of the midget builders with his vast engineering know-how and held this distinction until 1953 when, midget racing having lost some of its box-office allure, he sold his entire midget business to Johnny Pawl of Indiana. With the current revival of the midget sport around the country, Kurtis is once more turning out in his Glendale, California plant, a new standard midget—a carbon copy of his 500 Series

In anapolis cars, except that it is built on a smaller chassis. He also has on the drawing board a new type competition road car, an improved prototype of the Kurtis-Murphy Buick, which automobile dealer Bill Murphy has been gunning to some sensational west coast road victories the past season. The new models will be more streamlined, with further engineering improvements, more air to the wheels and tires.

You look at all these creations as they roll out of the Kurtis plant, and marvel at the precision workmanship and engineering skill that have made them so hand-perfect. Then you look at the owner of Frank Kurtis Co. At first glance, soft-spoken, six-footfour Frank Kurtis looks more like a professional golfer with his colorful sport shirt and neatly tailored slacks, or a dentist -anything but what he is, one of the world's truly great automotive geniuses. For he has other notable achievements to his credit-Kurtis built the big sled which Col. J. B. Stapp has used to test the physical endurance of a man's body at supersonic speed. Kurtis built the three-wheel Davis car. He produced 57 sports roadsters before Earl Muntz bought out the project. Another major job Kurtis handled was the building of nine \$26,000 jet engine starters for North American Aviation. The special starters were built on sleek four-wheel-drive cars standing only 30 inches high. The cars are driven under the belly of the jets and attached to the engines.

You look at his hands as they trace the details of his latest brainchild—you see fingers that are long and tough, those of continued on page 51



JIMMY DAYWALT and the late Bob Sweikert scorch the Indy bricks in Kurtis-Krafts.

OUR TITLE MAY SOUND STRANGE.

but all indications point out the truth of the fact. If you take into consideration that the Cad has the lowest depreciation, percentage-wise, of any domestic car; that repairs should be at a minimum; and that the fuel economy we obtained from our test car without using any gimmicks was the best of any large car tested this year, it all makes sense. Then throw in quality workmanship and materials, practically all the comforts of home, a superb ride, prestige . . . and what have you got to lose?

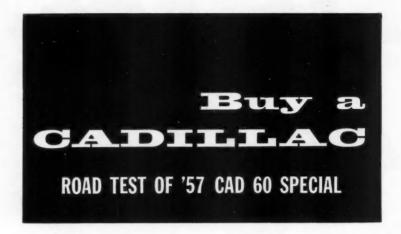
The Cadillac that we drove was a 60 Special Fleetwood. It has the longest wheelbase (133 inches) and is one of the largest passenger cars overall (224 inches) built in the U.S. Only the Cadillac 75 limousine and the Lincoln are longer. The engine is the same as in the series 62 and 75, with 365 cubic inches developing 300 horsepower. Total weight, with a full tank of Mobilgas, is 5140 pounds.

THE RIDING QUALITIES are just about the best found on any present day automobile: super soft with but very little pitch and roll. Recovery after hitting a bad dip is quick and, even on washboard type roads, vibration can hardly be felt. The car does lean quite a bit in sharp turns, but this characteristic is hardly felt by the passengers.

HANDLING IS EASY, though not as good as on some other domestic cars. The great weight makes itself felt when driving through sharp corners, where the car heels over noticeably, and generally has an adverse effect on performance. The power steering gives enough road feel and is very easy, but at higher speeds on rough roads it needs frequent correction. And, if you're unfamiliar with this car, it's wise to keep an eye on the speedometer, since the absolute silence of operation can be deceiving.

PAINT, FINISH AND TRIM are very good, with body panels and chrome strips meeting where they should—in line, which can't be said for all makes. Interior materials and workmanship are excellent giving the impression of a custom-made car; and, certainly, with the wide variety of fabric and color combinations offered, it can easily be suited to the individual's personal taste. From the leather-padded dash and leather-covered window sills to the rich upholstery, it spells sheer luxury. Every detail has been worked out for the comfort of the owner.

As a matter of fact, Cadillac would seem to be stressing workmanship, quality and comfort even more than in previous years. Aside from the consistently fine calibre of the overall craftsmanship, a very successful effort to eliminate the small annoyances and to anticipate passenger and driver wants has been made. The extra large glove compartment, for instance, besides being located amidship, has the



release button located far left, within easy reach of the driver. The same is true of the radio, both the volume and tuner knobs being on the left side. All levers, as a matter of fact, have either been recessed or located behind the dish-type steering wheel.

The instruments are well grouped, large, and highly legible. There is no need to squint, squirm, check the road, then squint some more. One glance should do the job. And speaking of glancing, the side view mirror is adjustable from an inside lever. TIRED OF OPENING THE TRUNK LID? It's now power assisted. Insert the key, turn, and an electric motor will free and partly raise the lid, with the manual effort being reduced to a minimum. It works the same in reverse, both operations being a boon to ladies, children and those who like to play "Open, Sesame." You can also unlock the trunk with a button located

in the glove compartment. A red light reading "trunk" will flash on, signifying a successful disengagement and warning you not to drive with the lid open. It is, incidentally, commodious, to say the least. FUEL ECONOMY WAS ASTONISHING for a 5100-pound automobile. Our tank average for 332 miles was 14.0 mpg, and at steady speeds of 30 mph we averaged 24.1 mpg and at 60 mph, 16.9 mpg. It proves that good fuel economy is attainable from a high compression, modern engine, provided it's coupled to the right rear axle ' ratio. In the case of this particular car, the high-speed axle (3.07 to 1) gave good economy, but lessened its acceleration

PERFORMANCE IS NOT the highest on the list, but don't hold that against the car. It was not, after all, designed to be a hot rod—anything but!—and its 300 horses can move you from place to place very,

PHOTOS BY WORON



ACCELERATION FIGURES compiled with the aid of the fifth wheel indicated that despite size, weight of car, performance was more than adequate.

AN MT RESEARCH REPORT by Otto Zipper

FOR ECONOMY?

REVEALS FANTASTIC FUEL ECONOMY



very quickly, indeed. Acceleration through the gears is smoothness itself and top speed is well over a hundred.

CADILLAC'S TWO MAIN DOMESTIC competitors in this price-class range have some fine offerings; and, in certain categories (e.g., performance, handling and, some might say, styling) Cad is short of being tops. But in an overall analysis it would be difficult to say that another make is better.

We do know this: while coming back to Los Angeles from our testing site at El Mirage Dry Lake, we drove through an area called Mint Canyon. Maybe it was that magical, just before dusk, time of day—maybe it was the splendidly buoyant semi-desert air—or maybe it was a combination of those natural phenomena and a fine mechanical achievement that made us think we had never before so much enjoyed an automobile ride.

PERFORMANCE

(300-bhp engine, 3.07 rear axle)

SPEEDOMETER ERROR

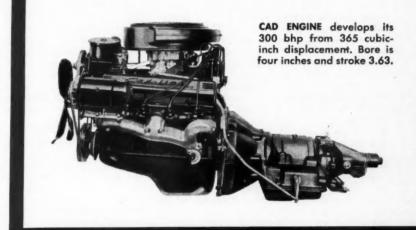
Read 31 at true 30, 45 at 45, 52 at 50, 62 at 60, 78 at 75, 84 at 80.

ACCELERATION

From Standing Start 0-45 mph 7.7 0-60 mph 12.4 Quarter-mile 18.6 and 75 mph Passing Speeds 30-50 mph 5.0 45-60 mph 4.7 50-80 mph 12.1

FUEL CONSUMPTION

Using Mobilgas Special
Steady Speeds
24.1 mpg @ 30 19.7 mpg @ 45
16.9 mpg @ 60 14.0 mpg @ 75
Stop-and-Go Driving
14.0 mpg tank average for 332 miles



(285-bhp engine, 3.54 rear axle)

Read 34 at true 30, 49 at 45, 64 at 60, 78 at 75

From Standing Start 0-45 mph 6.6 0-60 mph 11.4 Quarter-mile 17.8 and 78.5 mph Passing Speeds 30-50 mph 5.3 40-60 mph 5.0 50-80 mph 11.0

Using Mobilgas Special
Steady Speeds
21.4 mpg @ 30 20.2 mpg @ 45
17.4 mpg @ 60 14.7 mpg @ 75
Stop-and-Go Driving
12.8 mpg tank average for 512 miles



The Mercedes-Benz 300 SL coupe has a remarkable success. On the sports car market, the new 300 SL roadster may have an .

FOR A HIGHLY SPECIALIZED as well as a high-priced car with only two seats and little luggage space, the Mercedes-Benz 300-SL coupe has made a remarkable international impact. To date 1400 have been sold to buyers who enjoyed its tremendous performance and its beautifully finished eye-catching body with the lift-up gull-wing doors. But for those who like open-air motoring, want to carry more luggage, or prefer easier entry or exit for the wife or girl friend in the car they drive, the new 300-SL roadster is for them.

Credited with reaching the highest point to date in European sports car design, the 300-SL roadster has a new chassis frame permitting a lower sill line, use of normal doors, and a new type of independent rear suspension which gives greater riding comfort while pushing its road-holding characteristics right up into the class of the Mercedes-Benz Grand Prix cars. Other features include a wrap-around windshield, grouping of all front lighting elements under single lenses, and a luggage compartment of useful size at the rear.

The new roadster body subtly develops the style theme established by the coupe. The folding top lies under a hinged metal panel, and when it is erected there is additional space for small luggage.

Technically, the most interesting feature is the new rear suspension, which represents one more step forward in the long search for the perfect combination of riding comfort and road holding, a search in which Daimler-Benz engineers have played a leading part. Basically, the new layout is a single-pivot swing axle, with low pivot point like those used on the touring models and the 190-SL sports car. It gives the minimum variation in rear track and wheel camber, lowering the roll center, and reducing the tendency to oversteer so often present with previous swing axle designs. The swinging half axles are connected at their outer ends to longitudinal radius

arms on rubber pivots, but new on the 300-SL roadster is a horizontal compensating spring between the two half axles. If one wheel strikes a bump, it rises independently and absorbs the shock, but if both strike a ridge in the road simultaneously there is added resistance against the sudden deflection which gives the "broken axle" effect so familiar on early swing axle designs. The riding comfort and improved wheel adhesion which follow make higher road speeds possible, and so the capacity of the vacuum servo booster has been increased. Front brakes have two leading shoes with all brakes having Al-fin drums with turbo cooling fins and automatic shoe adjustment.

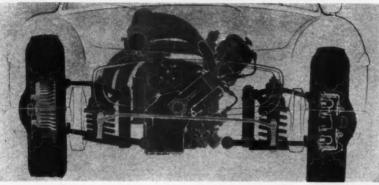
The engine, which lies on its side, is the well-known six-cylinder 2.9-liter unit with a single overhead camshaft and direct fuel injection into the combustion chamber. With a compression ratio of 9.5 to 1, it develops 225 hp on 100 octane fuel. Lower compression ratios are available to suit other fuels. The transmission is a four-speed synchromesh gearbox with central lever.

Safety has been given special attention in planning the interior. Upper and lower edges of the instrument panel are padded, and switches are countersunk between horizontal beads. Auxiliary instruments and signal lights are grouped between the speedometer and tachometer in a vertical panel, using colored tubes and light signals. Sun visors are padded; separate heater controls are provided for driver and passenger. A unique feature involves the horn button, which also flashes the headlights at night when used. Standard equipment includes fog, backup, and parking lights, lockable fuel filler cap, heater and demister, steering lock, two-speed windshield wipers, outside mirror, lighted glove compartment, and clock. Extra-cost equipment includes leather upholstery, safety belts, fitted suitcases, and Rudge center-lock hubs.



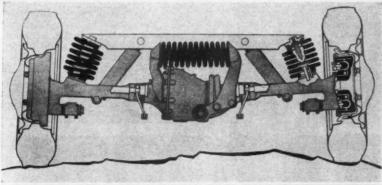


OPEN-AIR motoring enthusiasts, who have also had their eyesights aimed at the famed Mercedes-Benz 300-SL, will be impressed with this low-slung roadster with its wrap-around windshield, its single-lens headlights, and its traditional styling.



FRONT SUSPENSION on the new roadster is by uneven-length wishbones and coil springs with anti-roll bar and telescopic shock absorbers. Recirculating ball steering is used.

...INTERNATIONAL IMPACT!

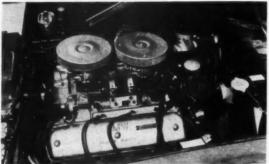


REAR SUSPENSION is a new layout with a single pivot swing axle and low pivot point. The swinging half axles are connected at their outer ends to longitudinal radius arms on rubber pivots, with a new horizontal compensating spring between the two half axles.



THE FOLDING TOP lies snugly under a hinged metal panel. Contoured bucket seats, a lockable gas filler cover, roll-up side windows, and padded dash with switches countersunk between horizontal beads make this a justly desirable highperformance roadster.





Some of the most interesting machinery in the world is still being plentifully produced on the other side of the Atlantic. For instance, at the Geneva show this year many of the cars shown on these pages were seen for the first time. Because of the need for fuel economy in Europe, the very small cars are getting the most attention from potential buyers, but the sports cars built for the American market are more impressive and more powerful than ever. Power is written in the lines of the BMW and the new Maserati, while the Borgward Isabella, the Wartburgs, the P-70 Sports, and the Turner are impressive for their all-around transportation potential. The Austin A-55 is good family machinery, and the Frisky is tops for economy. Engineering-wise, these cars are quite different, offering an interesting study for the automotive connoisseur.





THE BMW CARS from Germany are quality vehicles with excellent styling and high-performance engines. The overhead-valve, 205-hp, V8 powerplant is largest of its type being produced in Europe today. The 507 hard-

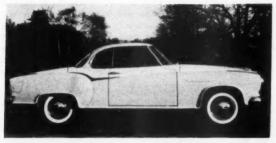
top model, shown here, also has convertible soft top that does not require removal for hardtop installation. Interior is roomy with low seating assured in contoured bucket seats. Dash has large, easy-reading instruments.



P-70 SPORTS COUPE is powered by a two-cylinder, twostroke engine displacing 690 cc, developing 22 bhp.



OTHER HIGHLY-STYLED cars from behind iron curtain include the Wartburg line which has a sports car incorporating a three-cylinder, two-stroke engine.



BORGWARD ISABELLA coupe, its thin-post streamlined styling was developed from well-known TS model.









THE TURNER 950 is a low-cost sports car using BMC 950-cc engine capable of 40 miles per gallon. The open twoseater body is made of Fiberglas on sheet-steel frame.



SUCCESSOR to well-known A-50, the Austin A-55 sedan embodies the "low-look" restyling, larger luggage compartment, and a larger curved rear window.

REMEMBER THE STORY that Henry Ford would agree to paint a Model T any color-as long as it was black? Like many such stories, this one is false. The color of every production Model T was Midnight Blue which, although definitely blue, did appear black under the usual layer of country dust.

When the blue T's were being produced 35 years ago, production progress ground to a halt every time car bodies and body parts reached the finishing shops for a dreary routine of hand brushing or dipping. Vast areas were needed for drying, or temporary storage of semi-dried bodies and fenders. Production men tore their hair finding a method to break the paint shop bottleneck. That they were successful is evidenced by the present existence of modern paint formulas and rapid refinishing methods which result in nearly permanent beauty.

The "paint or not to paint" decision seems to arrive slowly for most car owners. Modern auto finishes take their time about reaching a stage of shabbiness which requires drastic measures to correct. Usually the important question is "How long are we going to keep the car?" Obviously many of us prefer not to spend money on a car we intend to sell or trade soon. You might keep in mind, however, that usedcar dealers are unanimous in approving (and paying for) the increased value of a good refinish job. This consists of repainting the entire car to its original quality and in a color which will, of course, harmonize with the upholstery and interior trim. This work, when done by a skilled painter, will definitely enhance the sale or trade-in value. A "won't make much difference" job is mediocre paint refinishing in an oddball color which doesn't match the original body colors or upholstery. In the latter case, some dealers will scream to the heavens that you've knocked \$300 off the car's value, and this may be

A less mathematical approach to repainting the family car might include the desire to have it look better or last longer. If these are your reasons, it is here that many dollars can be lost or gained. A quality paint job at a fair price is worth every penny you'll pay for it, especially if you're going to keep the car several years longer. How long the newly painted finish will last depends greatly on you. Obviously cars under cover most of the time will suffer less paint deterioration than those left outside day in and day out. The finish that is waxed frequently will usually retain its color for a longer period than that finish which is only washed on rainy days. As to enamel or lacquer, they will provide equally good service if you give them the simple care each requires.

WHOM TO TRUST with repainting a car is a problem exceeded in magnitude only by how much to pay. There are new-car dealers, one-man paint shops, production refinishing organizations, and an old brush or two in the garage to encourage do-itvourself fans. Your new-car dealer's shop is a logical place to have the car repainted. His people know well the standards which should be met to restore newness to your make and model. On the other hand, few dealers do their own painting, and in large cities the work is often farmed out to production shops.

The one-man paint shop may be least expensive in dollars and cents but highly expensive otherwise. An individual painter is not subject to supervision; his quality standards will be no higher than demands of his customers. Therefore, if you feel qualified to insist on a good job and know when you're getting it, the one man shop could be a good bet. You should talk with previous customers and inspect several recently completed cars before deciding to give him the job.

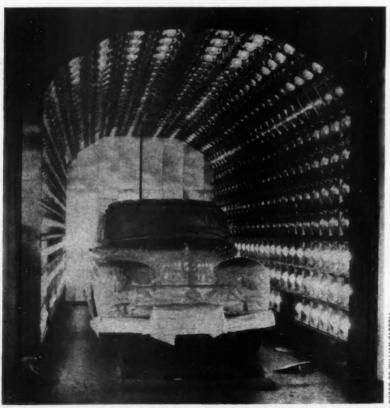
Production refinishing organizations operate paint lines with spray booths and bake ovens almost identical to those used by new-car factories. Production line shops are often heavy newspaper advertisers or can be located in the telephone book. Prices range from extremely low to the upper middle bracket. Fortunately, you can inspect refinished cars awaiting delivery. The only disadvantage might be the lack of individual attention given each car. This is left-handedly something of a blessing, for your paint job should be just as good as the next one.

SUNDAY MECHANICS look upon auto painting as a fertile field of dreaming and a barren desert for action. It looks so easy, vet the moment do-it-vourselfers delve into the project it becomes frightening. Like most simple operations, car painting recontinued on page 64

LIKE - NEW **CAR, \$50**

A new paint job does wonders for morale-and value, too

by William Carroll



Custom CARS illustrated

by James E. Potter

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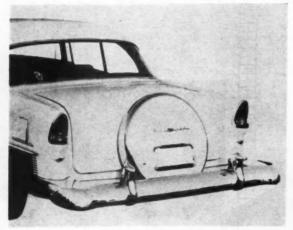


THUNDERBIRDS ARE BECOMING more and more popular as targets for the restyling enthusiasts. MOTOR TREND'S Custom of the Month is a 1955 T-Bird individually styled by owner Jerry Anolik of San Francisco. Jerry dropped the front, lowered the hood, and tunnelled the scoop, adding a custom insert mesh from a Mercedes-Benz. Louvers have also been added to the hood; the nose and sides are clean shaven, and '55 Mercury station wagon tail lights have been installed in place of the regular Thunderbird units. A special Naugahyde tonneau cover was made, and fully buffed aluminum discs on the wheels help to further individualize the car. As a member of the Shifters car club of San Francisco, Jerry is also interested in his car's performance, so he installed a 21/8-inch-diameter chromed roll bar for drag strip operation and proceeded to soup up the T-Bird powerplant. He uses three carburetors mounted on an Edelbrock manifold and magspark ignition setup. The cylinder heads are ported and polished with the stock bore and stroke used. The car, equipped with Fordomatic, has an official 91.87 mph in the quarter-mile time trials and 95.03 in a trophy dash. To give the car further individuality, Jerry installed a nerfing bar in front instead of the usual solid Thunderbird bumper, and striped the entire car with red paint. Some of the body customizing was done with plastic kits. There you have it-a beautifully restyled automobile that is also capable of high performance.

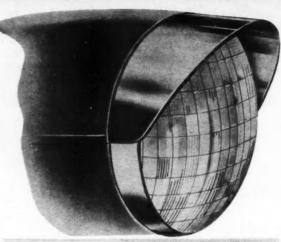
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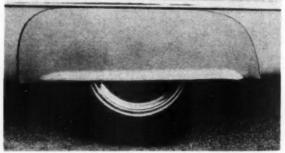
Custom CARS

bolt-on customizing



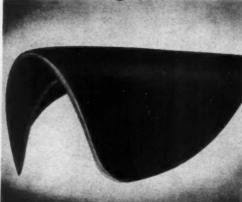
BESIDES ADDING more usable luggage space in trunk, Continental kits give car a longer, lower look. Pre-assembled at factory, kits usually include all necessary hardware. From \$45 to \$179, depending on the type.

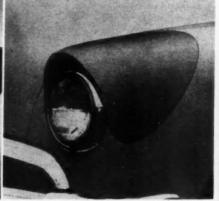




FENDER SKIRTS are available to custom-fit your particular car, whether it requires a teardrop, box-style, or streamlined design. Some skirts, such as the Bel Air "bloomers," have been discontinued. Costs from \$10 to \$27 a pair.











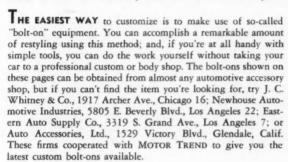
SHADED HEADLIGHTS and chromed eyebrows (top) definitely modernize older cars. The headlight rims sell for \$7 a pair, while the metal brows are priced at \$29.95. Latter can be welded or brazed onto fender with no alterations to lights or fenders.

hub caps

CAR GLAMORIZING usually starts with the wheels—after whitewalls come the fancy chrome discs. A deluxe Ford disc gets individuality by bolting on a chrome bullet, as shown.



UPSWEPT FINS will modernize your older model car. This metal fin kit comes complete. Sells \$12 to \$15 pair.



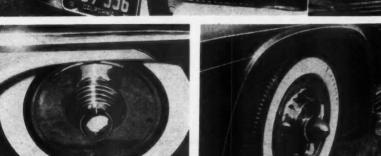
CUSTOMIZERS often create trends by popularizing restyling innovations. For instance, the simplified grille is a case in point. Here, the center grille bar is replaced by four additional chrome strips (\$5.95) that give a solid, massive-looking front on 1949-50 Mercurys. Other "bolton" conversion kits include solid, single-piece grille bars; a "floating-type" bar that can be used in construction of a custom-styled grille of an enthusiast's own design, etc.



ROCKET LIGHTS lengthen the car's lines and are easy to install; fit 1952-56 Ford and Thunderbird; cost \$14.95.









LATEST DESIGNS in chromed wheel discs include this plain number (left) that's topped with a bullet, and a louvered design with a bullet spinner. Wheel discs run from \$5.50 to \$15 each.

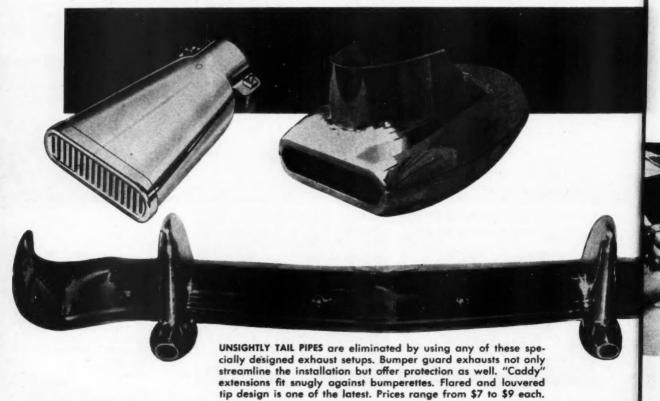


EASY TO INSTALL BOLT-ON CUSTOMIZING INVOLVES NO METAL BENDING





EXHAUST PIPE TIPS and extensions, made of heavy gauge steel and chromeplated, dress up your car. You can get a wide assortment, from the "pencil" tips that fit over the tail pipe to larger diameter tips that give a rumble to the exhaust. Exhaust cutouts are quite popular now, controlled by cable from the dash. Prices vary according to size and shape, but run anywhere from \$2 to \$15 a set.





SIMPLIFICATION has long been one of the keys to the customizing art. Removing the hood ornament without getting involved in expensive metal work and repainting can be accomplished by the use of any one of these "bull noses." Cost: \$3 to \$6.





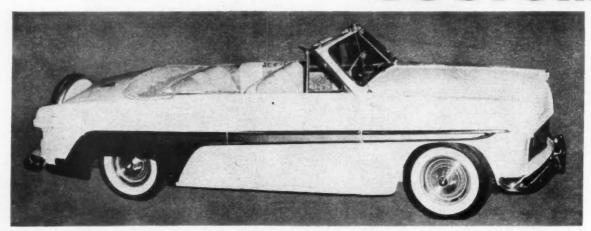


INSTALLING BUMPER EXHAUSTS can be accomplished by using a $3\frac{1}{2}$ -inch hole saw cutter attached to a $\frac{1}{2}$ -inch high-speed drill. Apply oil while cutting; file rough

edges with round machine file; and insert, using a '54 Buick porthole side trim unit. Install a two-inch exhaust tip through porthole unit to complete job. Simple enough?

Custom CARS illustrated

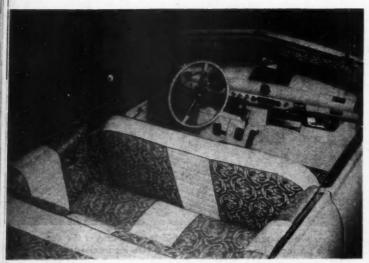
CUSTOM



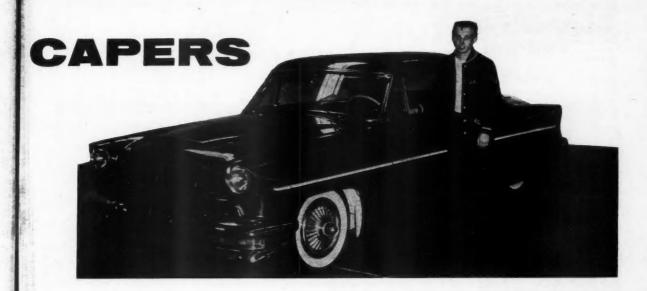


WITH AN INTERIOR (left, bottom) that is upholstered in gold and white brocade offset by white leather pleats, Jim Button's '50 Ford (left and above) modified custom convertible is an outstanding example of what can be accomplished with an older car. Physically lowered six inches, the car is lowered visibly in appearance in addition by use of '55 DeSoto chrome strips painted white with gold color sweep. It has tunnelled head and tail lights, molded and peaked hood and trunk, an air scoop on hood, and extended rear fenders. Grille is wire mesh chromed. Under hood is a '54 Cadillac engine with solid lifters, four-pot manifold, milled heads, and dual-point distributor. Button is member of Manteca Pacific Pacers.

QUALITY WORKMANSHIP is evident in (below) LeRoy Goulart's '51 Ford customized coupe from Stockton, Calif. It features '55 Pontiac front bumper bars, flared front fenders, grille opening molded and rolled with '56 Imperial bars inserted, a louvered hood, Fiberglas extension over license plate.







RICHARD SODERQUIST (above) of Turlock, Calif. is standing beside his customized '54 Mercury Monterey twodoor sedan, giving you an idea how a five-inch lower-ing job can shrink the height of an automobile. Dick has used a grille and front bumper from a '55 Pontiac. An eye-shade is installed over the frenched headlights, which are emphasized by white striping over the copper mist metallic paint. Tail lights (right) are '56 Packard, and rear bumper has exhausts notched in. Air scoops are cut in each rear fender. Gene Winfield did work.

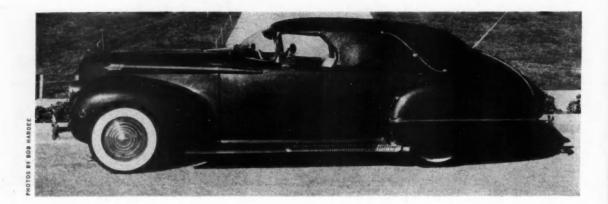
QUITE UNUSUAL is the chromed tubular grille that comes to a V in Ronnie Leal's '53 Chevrolet hardtop custom (below; below, right). Also notice peaked hood, painted caps over the headlights, and the extended rear fenders which house the '55 Lincoln tail lights. The front bumper has been molded in to eliminate the protruding attaching bolts. Equipment includes a first-aid kit, fire extinguisher, safety belts. White rolled Naugahyde is used on interior. Ronnie is from Oakland, California.



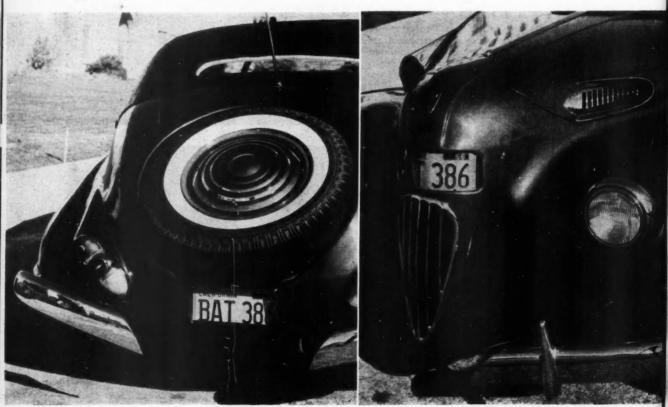




Custom CARS illustrated



MANY ORIGINAL IDEAS have been incorporated into this unusual custom, hardly recognizable as a 1940 Buick Super four-door sedan. Profile view discloses a chopped top, blanked-out rear door glass, landau irons, a wrap-around windshield, completely enclosed rear wheels with a tear-drop-design rear fender, and exhausts that protrude out the side just forward of the rear wheel centerline. The hood scoops are hand-formed, and feature louvers and a tapering sculptured tunnel. A special curved enclosure is reserved for the front license plate, and the grille is made out of %-inch rod, chromeplated. Spare tire is inset into rear deck. Frank Boyle of San Diego took 18 months to build this unique custom.



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AS WE GO TO PRESS

In this new feature the Editors will try to keep readers abreast of latest developments before deadline

C-W, D-B, AND S-P REALLY MERGE At presstime, C. W. Hurley announced for Curtiss-Wright that effective May 20th Hoffman Motors would no longer distribute Mercedes-Benz cars. At the same time he stated that C-W, Daimler-Benz, and Studebaker-Packard were jointly forming a new American company, Curtiss-Wright & Mercedes-Benz, Inc. "to provide for the development and sales of products in the U.S., Canada, Mexico and Cuba." Studebaker-Packard, in signing the agreement, will make available to their dealers the full line of Mercedes cars and trucks.

Studebaker-Packard will also soon bring out three versions of an economy car for less than \$1800: a two-door, a four-door and a wagon. Each will have as standard equipment a heater, defroster, directionals and an electric wiper. Mileage with the six-cylinder engine is claimed to be 25-29 mpg. Design is "American-type that will set a new styling trend.

It's also reported that along with Studebaker, Packard and Mercedes continuing their full complement of cars, Packard will bring out a new Hawk this

fall.

NEW VOLVO Our Correspondent from England, Gordon Wilkins, tells us that while Volvo has been waiting to get the new Amazon into production, they have put the new engine into the existing PV-444 sedan. New engine has bigger bore, displacement of 96 cubic inches (up 10), higher compression of 7.5 to 1, is rated at 60 bhp at 4500 rpm. PV-444L is identified by new grille. Plans are to sell 10,000 cars in U.S. this year.

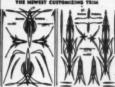
NEW FORD HARDTOP PRICE In the release from Ford relating to the Ford retractable hardtop price of \$2702 exclusive of federal taxes. transportation or dealer preparation charges, came this explanation (or apology?): ". . . the convertible with a hideaway top is a completely new car with 522 parts different from other Fords . . . It took close to \$20 million to engineer and tool . . . Twentyfour [other convertibles] are priced above it. The price is \$313 above the Ford convertible suggested list price . . . *

BRIDGEHAMPTON ROAD RACE CENTER
Huzzah! Huzzah! If plans go right, New
Yorkers this summer will see sports
cars buzzing around a new 3.1-mile road race circuit on Long Island's tip. Located just north of Bridgehampton, it's being carved out of 600 woody, hilly acres by the Bridgehampton Road Races Corp. Planned are a 3800-foot straightaway, chicanes, downgrades, upgrades. Area will accommodate 50,000 spectators, 10,000 cars. We'll bring you more info as things develop.

NEW CAR SALES LAG Despite the fact that spring generally brings about an upturn in new car sales, this year's sales are lagging behind predictions and last year's sales to date. Hardest hit have been General Motors' products, with their percentage share dropping from 52.8 in 56 to 46.4 this year. American Motors and Studebaker-Packard have dropped 2.5 per cent of the market, while Ford and Chrysler have both recorded gains. Ford is up to 30.4, while Chrysler is up a whopping 5.7 to 20.7 per cent. Biggest individual car changes have been Ford to first from second, displacing Chevy; Plymouth to third, replacing Buick; Rambler to 12th from 13th in place of Studebaker; Imperial to 15th from 18th; and, Packard slipping to 19th from 15th.

BRAKE IMPROVEMENTS HERE Concurrent with announcement that Buick has established a 196-mile test route in Los Angeles "to get the greatest test of brakes there is" comes information through our back door that '57 Buick 75 and 75R models have new front brakes, called Fabricast. Drum is bi-metallic, with cast iron liner and finned aluminum muff. With aluminum being able to absorb heat three times better than cast iron, lower operating temperatures should be maintained, offering longer drum and lining life. Fabricast drum weighs 14 pounds vs. 20 for cast iron.

BRAKE IMPROVEMENTS TO COME Raybestos has just demonstrated a new liquid-cooled brake to Detroit engineers. Preliminary tests indicate overall efficiency upped 300 per cent over current brakes. Raybestos Div. of Raybestos-Manhattan, Inc. states, "Key to the success . . . is complete elimination of heat build-up . . . making it impossible for brake to fade. Dissipation of heat is accomplished by channeling liquid from engine cooling system through tunnels in copper linings fused to a variation of conventional brake shoes . . . More on this later.



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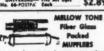
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To QUOTE FROM THE LYRICS of a favorite song in South Pacific, "There is nothin' quite like a dame." And as far as I'm concerned, that can also extend to include the Porsche, of which there is also nothin' quite like.

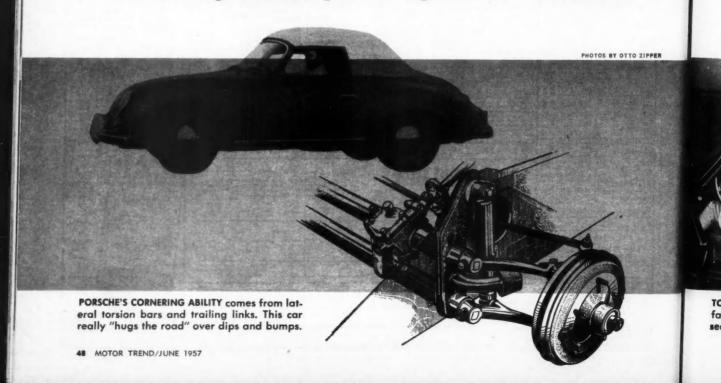
It's not that the Porsche is necessarily the epitome, but the *feel* of this car just isn't duplicated. The healthy rumble of the engine sounding from the rear, the absolutely effortless gearshifting, the gliding over the worst dips and bumps, the feather-light steering and the secure roadability combine to make a package that's so desirable I have to fight off the

urge to buy a Porsche each time I drive one. (I may succumb yet!)

I won't insult the intelligence of longtime readers of MOTOR TREND with a detailed description of the Porsche, because it's been around in a basically similar form for eight years now. Whether it'll ever greatly change is known only in the mind of Ferry Porsche in Stuttgart, Germany. Right now it's aerodynamically perfect and until a whole new (and better) chassis concept comes along, there's no reason to shuffle the cards.

There are three basic body types and each can be fitted with one of three engines. This does not include the very hot Spyder that did so fantastically well at Sebring, and about which there will

. . . In that perennial pick of sports car aficionados . .



be a separate report in a future issue. The bodies are the coupe, convertible, and Speedster (virtually a roadster). The four-cylinder air-cooled engine in 1600 form gives 60 horses, in 1600S form pumps out another 15, and in Carrera dress (1500cc) gives a healthy 100. Prices vary from \$3215 in the Speedster 1600 to \$6215 for the convertible Car-

The 1600 convert that was loaned to me by Sam Weill of Los Angeles' Competition Motors is in about the middle of the price scale—\$4065. (All prices are f.o.b. Los Angeles.) This one, for many reasons, is my favorite Porsche. I like the extra insulating qualities you get from the thickly padded top; the faint siren whine coming from the transmission-differential gears is less pronounced than in the coupe, for example. I like the fantastic ease with which you can put down the top; no power assist, yet you do it all with one hand. The workmanship and detail finishing is impeccable; oh, that our workmen took such pride! Then, of course, with top down you have as open a car as the Speedster; with top up and windows rolled shut you have a completely weatherproof coupe.

Performance-wise, this particular convertible was somewhat faster than the 84-hp '55 Speedster I reported on in July, 1955. This can best be explained by the fact that the convertible's engine

was well broken-in. Whereas the Speedster engine had probably no more than 500 miles on it, the convertible's engine had gone over 5000.

The best acceleration time with two aboard was 13.3 from a standstill to a true 60 mph, 19 flat up to 72 mph, at which time the Porsche crossed the quarter-mile mark. The average of the four best runs (two each in opposite directions to cross out wind differences) was 13.9 for 0 to 60, 19.2 elapsed time for the quarter, doing 70.5 mph when crossing the mark.

After numerous practice runs I found that the best times could be had by revving to around 3000, with slight blips of the throttle to prevent the engine from loading up, then easing out the clutch pedal instead of popping it. Shift points were at 4700 in each gear, though third gear didn't peak until after passing the quarter-mile mark. Peak speeds in each gear (just short of the redline marking from 4500-5000 rpm) were 23 mph in first, 47 mph in second, 75 in third, and 100 in fourth.

The convertible is undoubtedly not as quick as a Speedster because of its added weight (1870 pounds curb weight 1672 pounds for the Speedster). There is also another strange thing about this breed of cat in that there's probably more variation between individual cars than any other make.

In driving the Porsche, one recommended shifting practice is the constant use of the gears to make sure that whenever you dump on it you've got the revs in the torque range (the multiple green stripes on the tach). If you haven't, shift down. Lugging in too high a gear won't do the engine any good, nor will you like the lack of acceleration that you get in too high a gear.

The slight bucking you encounter when decelerating is due to the fact that the engine is trying to get down to its normal rpm idle of 800, but loads up, causing slight surges between 800 and 1200 revs. It can be avoided by disengaging the clutch or throwing the gearshift into neutral. This, incidentally, is recommended whenever you stop in a Porsche. The reason is to prevent wear on the clutch throw-out bearing, and applies as well to other cars

From a Porsche, even though you drive it hard and mostly around town as I did this one, you can get double the mileage you'd get from the cars twice its size. The only drawback I can see to the Porsche is that its bumpers aren't adequate for protection against the "playit-by-ear-parkers" that infest our country's streets. Oh well, I suppose I could again get used to picking out those parking spots where no one could possibly back in. To have a Porsche in my garage, it'd be well worth it!

orsche



TO PUT TOP DOWN, unsnap two fasteners, and while still sitting in seat, fold top to stowed position.



FOR A SNOOZE along the roadside, release the catch at the hinge point of seat-back, let fall to reclining position.



TUNING THE ENGINE or working on it topside is easy, though compartment is tight.



DRIVESCRIPTION

AC BRISTOL

A Quality Sports Car with High Performance

A Photo Story by Bob D'Olivo



COCKPIT of the AC-Bristol indicates well-thought-out design with easy-to-read instrumentation, a large open package space, bucket seats, adjustable steering wheel.

F YOU'VE GOT THE URGE to enter production sports-car racing, or, if you've already been fender-bashing in this increasingly popular, highly competitive type of racing and need a more consistent trophy-getter, the A.C.-Bristol two-seater sports might be for you. Its two-liter Bristol engine would put you in Class E, and this should be a cinch for an overall win. If your local sports-car club runs Classes C, D, and E together, a class win is in the bag, and with a capable driver, again, an overall win shouldn't be too difficult.

This has been the case in West Coast sports-car racing with the A.C.-Bristol owned by Ed Savin and driven by a well-experienced production-car driver, Bob Oker. This car has received 10 checkered flags out of 10 starts, six of them overall wins in production

races and four Class E victories from main event, modified races, bringing home a total of 16 trophies.

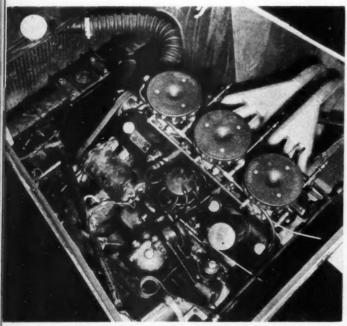
The Bristol D-type, two-liter, six-cylinder engine delivers over 120 bhp at 5750 rpm, with a maximum rpm of 6000, using three multiple-jet downdraft Solex carburetors. The central control Bristol gearbox has four speeds forward with a top ratio of 3.91. Maximum speeds through the gears are 40 mph in 1st, 65 in 2nd, 90 in 3rd, and about 115 top speed in 4th. At the ½-mile drag strip the A.C. would cross the line in 16 seconds, turning 83 mph, and will do 0 to 60 under 8 seconds.

The 90-inch-wheelbase chassis is constructed with three-inch steel tubing for main rails and 1½-inch and ¾-inch tubing making

up the remainder. Independent suspension front and rear is provided with transverse leaf springs and wishbones, snubbed by Armstrong telescopic shock absorbers. Girling 11-inch hydraulic brakes with Al-Fin drums assure quick stopping of the 1685-pound (dry) A.C.

Aluminum paneling is used on the handbuilt body and shows excellent workmanship. Snug-fitting, leather-covered, adjustable bucket seats hold you firm behind the wheel, which has an instantly adjustable steering column.

The base price of \$5195 for the A.C.-Bristol assures a quality automobile for the discerning motorist, and a high-performing sports car for the eager, competition-minded driver.



THE TWO-LITER, SIX-CYLINDER ENGINE delivers 120 bhp at 5750 rpm, using three Solex carbs. Gearbox has four speeds forward. Top speed is about 115 mph.



THIS PARTICULAR SPORTS CAR has won 10 checkered flags in 10 starts, six of them overall wins, and four class E victories.

Mr. 500

continued from page 27

a man who has spent the better part of his life working with tools. Kurtis put school behind him at the age of 14 to get a car servicing job with Don Lee, a race car owner and car dealer. "Seventy-five cents an hour," Kurtis recalls. "Big money to

ne then."

In his spare time at home the young mechanic put together several bodies on Model T Ford, Model A Ford and Buick chassis. He'd drive one for awhile; somebody would offer him a profit, and he'd build another one. By 1932, a lot of Don Lee's racing fever had rubbed off on the lanky Kurtis. In 1932 he built his first racing car.

"It sure was a pretty thing," he recalls. "But not very speedy." Next year Kurtis put together his first experimental car, made up from 27 assorted wrecks in a nearby junkyard. This one performed much better. The speedster—with a top of 90 mph—cleaned up at the local tracks, and gunned the budding genius into a sizeable chunk of spending money. This car was the curtain raiser to the Kurtis saga. Kurtis next went to work for car designer Howard Darrin, from whom he learned much in the way of body styling. Kurtis left Darrin and built his own two-car shop in Glendale, a suburb of bustling Los Angeles.

The plant has expanded with the years. If you were to walk into the Kurtis plant cold, you would probably be surprised at not finding any production line system, any automatic machines turning out parts, any steely-eyed foreman shouting for more production. In fact, you'd be more likely to ask yourself how a race car—the best that money and brains can produce—could ever be built with such seemingly effortless efficiency.

A few minutes' casual inspection would convince you, however, that here is concentrated the cream of racing car craftsmen to be found anywhere. In spite of the shop's relaxed feeling, nine skilled employees are busy the calendar around—on Indianapolis-sized roadsters, competition cars, sprints, standard midgets, custom-built sports cars, and even quarter midgets which Kurtis is producing with the same infinite skill that goes

into his Indianapolis bombs.

The present 500-F series may be his best to date. It was Frank Kurtis who took the plans of Bud Winfield and sportsman Lou Welch in 1946 and built the first controversial Novi race car, a long, slinky, lethal-looking beast with a 181-cubic-inch 700-horsepower supercharged V8 engine. Ralph Hepburn piloted it in the big race that year, developed supercharger trouble, and was forced out. The following year Kurtis built another Novi along with the big Bowes Seal Fast Special, the Ross Page Special and the Anderson Special. With that invaluable experience under his belt, he started work on his first original Indianapolis design. The following year—1948—eight sleek Kurtis-Krafts thundered up to the starting line at Indianapolis.

What emerged, finally, from Kurtis' first design was the 3000 series, then as now one of the finest competition cars ever built. As first designed it had a truss tubular frame of 1.5-inch, 4130 steel tubing, torsion bar independently suspended, and a de Dion rear end. When Johnny Parsons was signed to drive Kurtis' personal car in the middle of the season, he hiked it to second place in the championship circuit

standings.

The next year Kurtis eliminated the de Dion rear end and substituted a Halibrand quick change rear end. Parsons slashed out a second at Indianapolis, then went on from there to win

the circuit championship.

Parsons took down the checker in the 1950 Indianapolis grind, in the same Kurtis-Kraft. Kurtis watched his product roar to smashing victories in 1951, 1953, 1954 and 1955. Sam Hanks missed adding a 1956 Kurtis win when Pat Flaherty hurtled his John Zink Special into the winner's circle ahead of the thin man by a matter of seconds.



START OF 1956 RACE at Indianapolis. Kurtis-built cars occupied 23 of the 33 starting places. This is mute testimony to the success of Frank's cars.

The pattern of victories for Kurtis-Kraft mounts augurs pretty well for a man who is no diploma-packing engineer, but who knows his machines with the intimacy that only 35 years of trial-and-error experimentation can give. But Kurtis isn't cooling his heels. The man who has built more than 100 championship race cars since the end of World War II, over 600 midgets, and is now beginning to take a noticeable bite out of the road races with his 500-X competition roadster, is forever trying to improve the breed.

His 1957 Indianapolis cars feature some new innovations (see pages 22 and 23). With just a wee bit of pot luck Kurtis figures he just might blow the other competitors clear off the

bricks this year.



KURTIS-KRAFTS are masterpieces of automotive craftsmanship. Body sections, panels and tanks are hand formed. Entire design centers around greatest possible strength with minimum weight. Shop produced 14 new cars which are entered in the '57 Indy classic.





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Seat Belts NO —DEATH TRAPS?

continued from page 18

He slowed as the last car pulled out to pass the others. Hearing the siren, its driver swerved back behind a pickup. Harvey jammed his throttle down, when unexpectedly the pickup changed lanes directly in front of the patrol car.

"I didn't know 'til later there were six kids in the back of that truck," says Bill Harvey, "but when I saw I was going to smash it although my brakes were locked (he slid 144 feet), I jerked my steering wheel to the left. As the patrol car went into its broad slide (108 feet more). I crouched in the seat and held myself down by pushing against the steering wheel. I heard my right rear fender slam against the pickup as my car spun when the right front tire dug into fresh dirt. Then my car rolled completely over an eight-foot cliff, lit on top over my head, bounced into the air, crashed down on top again, rolled over onto its wheels, and ricocheted backwards down the highway divider for 93 feet. I tried the radio but it wouldn't work. Later, I found the antenna in the ground where my car smashed its top in.

"Just then a passer-by rushed over and said, 'Are you all right?'

"'Sure, I'm all right,' I told him as I tried the radio again.

"'Are you sure you're all right?' repeated the passer-by.

"Yes, I'm just strapped in here."

Officer Harvey undid the seat belt that had just saved his life, climbed out of the wreck, and had another passer-by telephone the patrol. Total injuries: A mark on Harvey's car, two scratches on his hand, and one tetanus shot in the derriere. Plus citations "to meet the judge" for a careless truck driver.

We asked Officer Harvey what ran through his mind as he crashed at 80 miles an hour. Harvey said, "As the car was rolling over and I was pushing myself through the seat I couldn't help but think: 'Boy, oh boy, what a lot of paper work I'm going to have to fill out when I get back to the office.' "His car laid 24 feet of light skid marks, 120 feet of heavy marks, as he was trying to stop before crashing the truck, plus 108 feet of tire rupturing broadsliding before the car rolled over, to slide backwards for 93 feet.

THE LIFE of Officer Dallas Clary also hung from a seat belt during an emergency Code 3 run. He had slowed to 60 miles an hour for an intersection, then accelerated to pass two vehicles. In Officer Clary's own words, "The first was a coupe, and the second a sedan which pulled over to let me by. I was riding the center line and as I passed the sedan, the coupe suddenly turned left toward a field road. It was a question of hitting him at

70 miles an hour and take a chance of killing us both, or else turn with him and hope I could pass on the loose dirt shoulder. Unfortunately, the field had just been plowed. When I hit the rough stuff, my car's left front wheel stuck in a furrow. I tried to pull it out but the patrol car started to slide and I sailed sideways by the coupe. There was a telephone pole coming up; I couldn't get out of the furrow, and the broadslide had become total. The only thing I could think of was, 'Here's where we give safety belts a real test.' Then I ducked."

His patrol car sheared off the 'phone pole, forcing the right side of the windshield into the driver's compartment, where it cut Clary's ear. After the car had stopped rolling, he radioed headquarters for another unit to complete his original accident call, and reported his personal problems.

"Are you all right?" asked the coupe driver leaning in the patrol car window.

"I'm okay," said Officer Clary as he unbuckled his safety belt. "Where's your driver's license?"

"What are you going to do to me?" questioned the coupe driver.

"I'm going to pinch you for violating my right of way."

The shaken driver grabbed for his heart and groaned, "Oh my goodness, I'm going to have a heart attack!"

USE OF SAFETY BELTS by California Highway Patrolmen began in late 1952 when 12 patrol test vehicles were equipped with lap-type belts. However, not just any belt was considered good enough. Information available to the CHP pointed up that some belts used inferior webbing, fastenings, or hardware. In some instances it was found that after a belt had been placed under the strain of a simulated accident, release mechanisms would not properly function. Even accidental unlocking of the clasp was a matter of serious concern. In some instances floor fastenings deformed or failed under load, and improper lacing allowed webbing to slip loose at low body block pull. Square washers, which under impact stress would tend to cut through the automobile's steel floor, were found in some cases to be a part of installation kits. Considering these factors, the patrol decided that use should be made of only those belts which met or exceeded requirements of CAA Technical Standard Order C22B.

Response by officers using the belts was so encouraging, the department bought 250 for permanent installation. The first vehicle, permanently equipped, was placed in service May 1, 1953. Since then every new CHP car has been equipped with two lap-type safety belts installed in the front seat. Today 730 vehicles (of a total of 807 in the patrol fleet) are fully equipped with safety belts.

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Other accident reports tell of an officer pursuing a speeding sedan at 90 miles an

hour, and preparing to overtake the violator. At that instant another motorist fails to heed the red light or siren and changes lanes directly in front of the pursuing emergency unit. In efforts to avoid a murderous rear-end collision, the officer turns toward the dividing strip, hits the curb, turns over twice, hurdles across opposing traffic lanes and comes to rest alongside the roadway 330 feet beyond the first skid marks. He unhooks his belt, climbs out of the wreckage, and goes to a doctor to be treated for minor injuries.

MANY TIMES the question is asked, "What about that accident where it might be necessary to leave my car in a hurry?" More often than not the questioner is concerned with striking a body of water or catching on fire. When diving into water at speed, the impact is similar to that of striking a brick wall. If those in the car are seriously injured or knocked unconscious by sheer impact, they're quite unlikely to leave the car by themselves. Protection offered by a seat belt would reduce the shock of collision, then it is only a matter of seconds to release the seat belt, lower the windows (or open doors), and swim to safety. The same thinking applies to a flaming accident. Should a violent collision so damage the car as to start a fire, uninjured occupants protected by a seat belt are much more able to help themselves and leave the car in safety than they would be if seriously injured by the impact.

In most cases the high-speed highway accident involves no other car, and finds the maximum safety factor to be inside the car body. There, driver and passengers are protected by a sturdy web of steel and should be kept inside the car body by seat belts. In town, the sudden shock of a low speed collision has often caused serious injury to non-seat belt wearing drivers thrown against the steering wheel or tossed to the ground through an open door.

Assuredly no means of protection is perfect. Even an umbrella will not protect you against every raindrop. Nor will an insurance policy include an expense account for use in the hereafter. However, umbrellas, insurance policies, and seat belts are sensible means of increasing either the length of your life or the continued enjoyment of good health.

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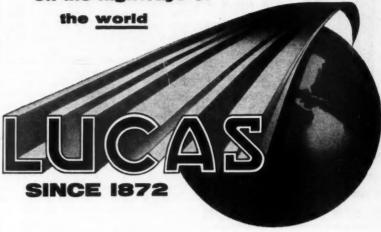
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As Officer James Dukes said, after demolishing his patrol car in a six-footdeep drain ditch at 75 miles per hour: "I have seen or investigated dozens of collisions with impact almost identical to mine in which persons involved were either killed or suffered major injuries to the head and chest. It is my honest and considered opinion, the only reason my partner and I were not killed or very seriously injured is because we both had our safety belts on."

No wonder California Highway Patrolmen are reluctant to make a Code 3 run in their few remaining cars not yet equipped with seat belts.

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DOLL-UP Seat Belts YES

-DEATH TRAPS?

continued from page 19

distinction of being capable of saving lives. However, in practice the analogy breaks down completely because the life jacket demanded by law is designed, tested and approved, while various serious doubts have been raised as to the efficiency of seat belts which carry no practical or official restrictions with regard to their design or materials used in their construction. Tests by actual humans under actual conditions have not yet been undertaken to prove their protective value.

A restraining device should be a scientifically designed and proven product produced with the clearest concepts in respect to what it has to do and how it is to do it. Consideration should be given to its adaptation to individual vehicles. Unfortunately, judging from the multitude of vehicles and even the basic designs of seat belts that are offered, it is abundantly clear that these concepts neither have been thoroughly understood nor investigated and, so far as officials are concerned, no practical law exists to insure that even the minimum of safety is provided by a seat belt. It is not, therefore, surprising that the public buys according to its pocketbook, in sartorial fancy, acquiring all too often no more than an illusionary protection, facts about which coroners have made pungent comments when investigating fatalities of the road. The position is then rendered more tragic when it is remembered that the dead motorist bought a restraining device with the express purpose of protecting himself from just such a fate.

SOME INVESTIGATORS offer a theory that if passengers in automobiles are kept inside the car in an accident they will survive. One missing factor is "what was the condition of the dead passengers prior to ejection?" They may have been fatally injured or dead before the ejection. How many have viewed total wrecks, where survival appeared impossible, and found that the driver "walked away" with minor scratches. Also, how many times is a dead occupant viewed in a car while the ejected passenger is treated for minor injuries? Then it appears that the sampling that supports non-ejection for survival is defective. Until our data is more valid and extensive, we should avoid being dogmatic about conclusions.

In one case, a sedan failed to negotiate a curve at an estimated 70 miles per hour and struck a large oak tree, tearing the outer bark off and forcing the engine and one front wheel into the driver's compartment. The vehicle was a total loss and was found 28 feet from the impact point. Both driver and passenger had been drinking and failed to fasten their seat belts prior to the accident. Both were injured but lived. One was discharged from the hospital two days later. The other received a broken collar bone and a dislocated hip. Had they remained in the vehicle held by the seat belts, the engine and firewall certainly would have caused serious injuries. Ejection was the means of survival.

From other quarters we learn of police injuries due to seat belts in minor accidents. Dr. Jacob Kulowski, in the Dec. 1956 issue of the American Medical Association Archives of Surgery, reports a serious injury by a seat belt with a car damage of only \$300. The snubbing action of the belt was reported to have caused the primary injury. This case appears valid because of the substantiating evidence. We have investigated other cases where survival without seat belts could have been possible if the occupants had not been strapped in and impacted by collapsing structures.

FEW PEOPLE are conversant with the principles of restraint that must be satisfied if passengers of automobiles are subjected to the rapid and ungoverned dissipation of energy during an automobile crash. On several occasions, we have asked for volunteers to ride in place of test dummies wearing seat belts at crash speeds under 15 miles per hour. Many responded and all agreed to first witness a crash using the dummy, after which not one volunteer was to be found.

The high incidence of head injuries in automobile accidents indicates the need for protecting that part of the anatomy. Over 200 tests by Motor Vehicle Research, under actual car crash conditions, showed seat belts to be ineffective in protecting the head. The belt acted as a fulcrum, allowing the head to strike the windshield and dashboard top. No blow to the head is taken with impunity. Unconsciousness from a head-blow usually results in irreparable brain damage. Injury to most other parts of the body, while crippling and disabling, have been largely circumvented by modern technology. Almost any damage to the body can be repaired by surgery, but damage to the brain cannot be repaired.

Because "head-blows" dominate the list in automobile accident injuries, it might be well to consider the limited effectiveness of seat belts as a protective measure. The seat belt tests we have conducted indicate that the belt targets the head by restraining the lower torso and the head-blow might have not occurred without a belt. The force could be applied to another part of the body and distributed over a greater area of a less vulnerable body section. Restraining the lower body and allowing the head to impact a knob or dash contour that will cause a localized high pressure force to be transmitted to a body section so sensitive to injury seems

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to defeat the purpose of the seat belt. Surrounding structures and seat belts are so closely interrelated that lack of consideration of one can render the other almost worthless

Col. John Stapp of the USAF, in his AF Tech. Report 5915, clearly supports my findings that under 40 inches of unobstructed area in front of a passenger wearing a seat belt renders the seat belt ineffective in a crash. Our crash tests in which the abdominal areas of dummies were severely cut by seat belts are also supported by Col. Stapp's statement that the load must be distributed over 40 square inches of belt area and not on the abdomen or against an upper edge, or on a doubled belt. Such conditions exist only in laboratory practice.

Many qualified agencies such as the AAA have been careful in taking the "middle-road" regarding seat belts, and General Motors demonstrated to the congressional investigating committee the value of seat belts by actual crash tests at their proving grounds. Charles Chayne, Chief Engineer for General Motors, had this to say at the San Francisco Motorama: "And some people have been killed when using seat belts. This is because sudden pressure of the belt will cause pressure in the body, which is dangerous."

The American Society of Safety Engineers, reporting to the National Safety Council on a research project concerning seat belts, stated that experiments indicated that it was possible to have sufficient deceleration applied to a seat belt to do serious damage to the heart, by compression of the abdomen. Producing excessive hydro-static pressure to the heart usually results in death.

BODILY RESTRAINT of automobile occupants in crash decelerations is a scientific functional approach to reducing the injury and death rate. However, advocation of a seat belt alone in the modern automobile and being dogmatic about accident statistics is sheer fantasy!

Bear in mind, the average human cannot brace against more than 2 G or twice his body weight. Decelerations of almost 1 G are available in locked-wheel braking stops on some dry, clean, new road surfaces. Proper restraint therefore is of value to car occupants, but not in its present form. It is unfortunate that many people seated in a "fool's paradise" wearing a seat belt might be translated into a permanent one in event of an accident. With human life at stake advocators of seat belts should be willing to take the place of dummies in actual crashes to support their advocation, or refrain from subjective thinking until science can find the basic answer.

Our five-year research program in the field of seat belts can be summed up in one sentence: "If you can select the type of accident you are going to be involved in, wear a seat belt. If not, do not wear it because it can kill you!"



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car deliver every last ounce of power and performance that was engineered into it, then you want to know more about the Bendix Electric Fuel Pump. When you've tried it, you'll never operate a car without it-even if it does cost a little more. (Send for illustrated folder.)

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ELMIRA, N. Y.





Hellywood 46, Calif.

hours of blazing speed and tense drama at



World Grand Prix Champion Juan Manuel Fangio proved his right to that title as he and co-driver Jean Behra outclassed the starting field of 65 in the Sebring, Fla. 12-hour Grand Prix of Endurance for sports cars.

The winning combination was an international triumvirate—Argentina's Fangio, France's Behra and the race-dominating 4.5-liter Italian Maserati which finished a full two laps ahead of another factory entered Maserati, the 3-liter piloted by Stirling Moss and Harry Schell.

But the sweeping Italian victory is not the complete story. Detroit's long-awaited all-out entry into the sports racing category via the Chevrolet Corvette Super Sport held promise of being nothing short of sensational. Even though the SS had progressed from drawing board to reality in a short five months and was utterly untried and untested, it appeared to have winning potential.

When Fangio got behind the wheel of the SS practice car, a roughly finished model not even equipped with the special Duntov heads, turned a blistering 3:27 lap just out of curiosity and proclaimed that he could have cut two seconds from this had he tried, the excitement of the Chevrolet officials could barely be contained.

With John Fitch and Pierro Taruffi as drivers of the much hotter race car, Chevrolet might have a chance to put American machinery back on the racing map.

But practice laps don't win races and three laps after the LeMans start, Fitch dropped out of sixth position and pulled into the pits to have a wheel changed. Then, in rapid succession after

continued on page 59

10:00 A.M.

First off the line at the starting flag, two team production Corvettes, Dale Duncan, No. 3, and Dick Thompson, No. 4, briefly taste leadership.



10:01 A.M.

A thunderous roar announces the rest of the field fighting for position. D-Jaguar, No. 7, will claim 5th overall, while No. 24 failed to finish.

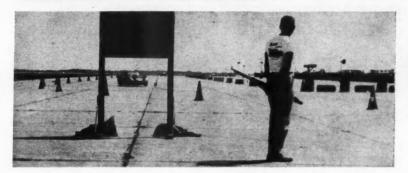


10:55 A.M.

John Fitch's Corvette SS pits for generator repairs which add to the untried car's woes. By now, Peter Collins' Ferrari is in an early lead.



Peter Collins, maintaining his lead but soon to lose it to the ultimate victor, prepares to lap J. Cook's Arnolt-Bristol on a narrow straight.



Jean Behra whips his Maserati through a turn just after taking the lead from Collins. Behra and Fangio settle down to a calculated pace.



Masten Gregory's privately entered 3.5 Ferrari, No. 15, moves into fifth place as he laps Bab Oker who drove Triumph over 11 hours total.



Carroll Shelby, Maserati, No. 21, wheels through Webster Turns shortly before he is disqualified due to over-zealous pit crew adding gas too often.

CONTINUED

2:00 P.M.

England's pride, Stirling Moss, moves his 3-liter factory Maserati temporarily into second place, the spot in which he and Schell will finish.



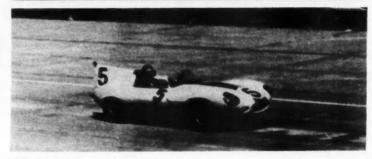
3:00 P.M.

Charley Wallace in No. 44 Porsche, on his way to win the Index of Performance, sweeps by Oker's Triumph. Wallace was 13th at this point.



4:01 P.M.

Ivor Bueb charges down the main straight after a six-minute pit stop with fuel-injected D-Jaguar during which all four brake linings were changed.



4:35 P.M.

Tough luck dogs Phil Hill. After his pit crew refuels his factory Ferrari, it refuses to start, making it the 18th to retire from the race.





4:45
P.M. Lotus is pushed last mile to the pits by M.R.J. Wyllie but effort is in vain. Car has broken timing gear, becomes 19th retirement.



5:45

P.M.

Gene Greenspun valiantly pushes his Ferrari coupe over two miles to pits but he too is in vain. Car is out with a frozen crankshaft.



Results of Greenspun's exertions in hot Florida sun tell. He collapses in pits from exhaustion and requires medical treatment.

5:48

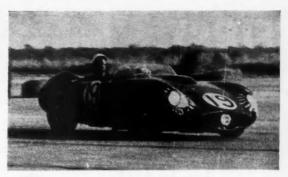
P.M.

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Mike Hawthorn, in a show of speed, moves up to second place in Jaguar, but brake problems forced him back to third overall by race end.





Jean Behra rolls along easily in the winning Maserati. Earlier, on the 20th and 27th laps, he recorded the fastest lap of the day, 3:24.5.





Joe Sheppard, in Colin Chapman's Lotus, moves into top spot in Class G. Car's finish position was an amazing 11th overall, third in Index.



10:02

Victorious and happy Juan Fangio rolls into the winner's circle as well-wishers start to close in. Maserati averaged 85.4 mph for 197 laps.

several promising laps, came generator trouble, brake trouble, coil trouble, and finally, rear suspension trouble. The car was withdrawn but few doubt that it will be back, next time primed and

The race continued. In the second hour, Behra took the lead from Peter Collins and, with Fangio, kept it from that moment on. In the process, Behra managed to tie his own fastest lap of the day, 3:24.5 (92 mph) posted on the 20th and 27th laps.

Confusion in the Maserati pits probably cost them an even greater victory. Carroll Shelby pulled in for fuel during the third hour and for some unknown reason, the crew put in only five gallons. Three laps later, Shelby was pulled in to be relieved by Salvadori and the car had to be refueled once more. During the 68th lap the car was disqualified for refueling before a 20lap interval had been run and at this time Salvadori was in a potentially dangerous eighth place.

The fuel injection D-Jaguar, driven by Mike Hawthorn and Ivor Bueb, had moved into second spot at the three-quarter mark and appeared to be a real threat to Maserati, only two and onehalf minutes ahead at that point. But excessive heat began to tell on the brakes and fluid started to seep so that Hawthorn drove the last portion of the race with full brakes on the front only, finishing third overall.

As the race drew to a close, it became more and more obvious that there is no substitute for racing experience and cubic inches. Fangio and Behra had both and the combination proved too much for the 38 finishers.

It was the second Sebring victory in a row for Fangio. He won last year in a Ferrari with the late Eugenio Castellotti as continued on next page

THE RESULTS AT SEBRING

FINISH

OVER-ALL PERFORMANCE

1	4.5 Maserati	
2	3.0 Maserati	
3	3.8 D Jaguar	
4	3.5 Ferrori	
5	3.8 D Jaguar	
5	3.5 Ferrari	
1000	2 C Connecti	

1.5 Parsche 1.5 Porsche 2.0 Ferrari 10 1.0 Letus 4.6 Corvette (production)

1.5 OSCA 2.0 Ferrari 4.6 Corvette (production) 15 4.6 Corvette (modified) 16

2.0 AC 17 1.0 Cooper 2.0 Triumph TR – 3
1.3 Alfa Romeo Giulietta 21 2.0 Triumph TR- 3

2.0 AC 22 23 1.5 MG 1.3 Alfa Romeo Giulietta 3.0 Mercedes 300- SL

Behra, Fangio Moss, Schell 0000 Gregory, Brero Hansgen, Boss Collins, Trintign De Portago, Musso Bunker, Wallace Kunstle, Miles Hively, Ginther apman, Shoppa son, Andr Linton, Beck De Vroom, Arents

Duncan, Kilborn O'Shea, Lovely Fernandez, Droulers Hallock, Goldman Oker, Johns Kaplan, Rainville Rothschild, Pennybacker Dressel, Cullen

Miller, Leaven



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MOTOR SPORTS

continued from preceding page

co-driver. Castellotti was killed in a practice ride a few days before leaving Italy for Sebring.

Marring the event was the death of Bob Goldich, 33, of Chicago, a member of the Arnolt-Bristol team. Goldich lost control in the Esses and was fatally injured when his car rolled.

An interesting sidelight on the racing strategy of the Champion came as he told reporters: "When I am racing, I occasionally ease up a bit so that I can listen to the engine in another car.

"If it is near the limit (of its endurance) I speed up a little and get the other driver to follow me past the limit of his engine.

'That is one of my tricks.

"The object is not to go as fast as you can, but to go at a speed you can maintain for 12 hours," he added. "The important thing is to finish!"

And Fangio's finish boosted the race record to 85.4 mph for 197 laps, 1024.4

Art Bunker and Charley Wallace, Porsche Spyder, were the Index of Performance winners, finishing eighth overall some 60 miles behind the lead Maserati.

A special nod goes to Bob Oker who drove a Triumph TR-3 to 19th position overall and first in Grand Touring Category II. Class 7. This becomes outstanding only when you realize that the 28-year-old Oker personally drove 11 hours, 6 minutes total, more than any other driver.

Further, it is reported that he drove 8½ of those hours without a clutch. In fact, the clutch operating arm was removed around the fourth hour.

Amoco, the official gasoline, posted \$10,-000 in prize money, \$3,000, \$1,500 and \$500 for the three front runners and the same for the top Index teams.

However, any non-pros who expect to race with the Sports Car Club of America in the ensuing year, were required to turn their money over to the club where it is donated to a worthy charity.

SEBRING SIDELIGHTS: The estimated 30,000 spectators paid \$3 general admission with 3,000 bleacher seats at \$2 extra and auto parking spaces along the course as high as \$10 per car.

Race Director Alec Ulmann, who organized the Automobile Racing Club of Florida for the purpose of sanctioning this one race, sold club memberships at \$100 per copy, entitling member and one guest to watch the race from the elevated ARCF stand in the pit area and to relax in the huge tent nearby, where two meals were provided. There were 60 members signed up for the one-day deal and indications that many more will "join" next year.

PALM SPRINGS: SCCA's Palm Springs Road Races, April 6-7, proved a turnabout



on last November's event when Carroll Shelby beat Phil Hill going away. This time, Hill's Ferrari had the advantage of cubic inches over Shelby's Maserati and Hill won with a 49-second margin.

what's coming up?

may

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17-19,	SCCA Sport Cars, Cumberland, Md. NASCAR Convertibles, Charlotte, N.C.
18-19,	Indianapolis Qualifications MARC 150-mile Stock Cars, Atlanta,
19,	Ga. URC-AARC Sprints, East vs. West, Williams Grove, Pa.
19,	NASCAR 250-mile Grand National, Martinsville, Va.
19,	NASCAR Convertibles, Norfolk, Va. Grand Prix of Monaco
19, 25-26, 25-26,	Indianapolis Qualifications SCCA Sport Cars, Thompson, Conn.
25, 25,	NASCAR Convertibles, Spartanburg, S.C. NASCAR Short Track, Bowman Gray,
26, 26, 26, 27,	Winston-Salem, N.C. NASCAR Grand National, Norfolk, Va. NASCAR Grand National, Portland, Ore. Nurburgring 1000 Km, Germany Canadian Autorama, Oueens Park,
29, 30, 30,	London, Ontario, Canada NASCAR Short Track, Gardena, Calif. Indianapolis "500" NASCAR 2-mile course Grand National
30, 30, 30,	road race, San Diego, Calif. NASCAR Grand National, Eureka, Calif. NASCAR Convertibles, Syracuse, N.Y. Rally of Germany. (Runs until June 2.)

NASCAR	Short Track, Chicago
NASCAR	Short Track, Santa Rosa, Calif.
SCCA Sc	orts Cars, Fort Worth, Tex.
NASCAR	Grand National, Sacramento,
Calif.	
NASCAR	Convertibles, Rochester, N.Y.

2,	USAC 100-mile Championship, Langhorne, Pa.
3,	Canad Daire of Polaises
3,	Grand Prix of Belgium
7,	NASCAR Short Track, Bakersfield, Calif.
8,	NASCAR Short Track, Gardena, Calif.
8-9,	SCCA Sports Cars, Lime Rock, Conn.
9,	NASCAR Grand National, Memphis,
	Tenn.
9.	NASCAR Convertibles, North
,	Wilkesboro, N.C.
9,	USAC 100-mile Championship,
	Milwaukee, Wis.
11-16,	Midnight Sun Rally, Sweden
13,	NASCAR Short Track, Toronto,
	Canada
14,	NASCAR Grand National, Charlotte,
1-4,	N.C.
1.4	NASCAR Short Track, Contra Costa.
14,	
	Calif.
15,	NASCAR Convertibles, Weaverville, N.C.
15,	NASCAR Short Track, Buffalo, N.Y.
15,	NASCAR Short Track, Hickory, N.C.
15-16,	SCCA Hill Climb, Milwaukee, Wis.
15-16,	SCCA Hill Climb, Mt. Ascutney, Vt.
	LICAC Society Booding Bo
16,	USAC Sprints, Reading, Pa.
16,	MARC Convertibles, Atlanta, Ga.
16,	Grand Prix of Holland
21.	NASCAR Grand National, Rochester,
	N.Y.
22,	USAC 100-mile Championship, Detroit
22,	NASCAR Convertibles, Winston-Salem,
22,	MASCAR Convertibles, Winston-Scient,
00.00	N.C.
22-23,	SCCA Road America Race, Elkhart Lake,
	Wis.
22-23,	LeMans 24-Hour Race, France
23,	NASCAR Grand National, Old Bridge,
/	N.J.
23.	NASCAR Grand National, Portland, Ore.
23,	
23,	NASCAR Convertibles, Norfolk, Va.
27-30,	Geneva Rally, Switzerland
29,	NASCAR Grand National, Spartanburg,
	S.C.
29,	NASCAR Convertibles, Chicago
20	MASCAD Short Track Marcad Callé

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New Car Owners! STOP ACID DAMAGE BEFORE IT STARTS

Protect your valuable engine against corrosive acids with this scientifically developed Magna-Power Neutralizer. This amazing magnesium alloy kills crankcase oil acids as they form . . . keeps your engine young, healthy and powerful for added tens of thousands of miles.

ABORATORY and road tests have finally proven that the major cause of engine wear in today's powerful automobiles is corrosive acids formed during combustion. Why?

Because, the regular—and high test—gasoline you are using in your car contains sulfur. This sulfur, along with other impurities, is burning away your muffler and tailpipe, eating away the chrome on your rear bumper and, EVEN MORE IMPORTANT, wearing away at pistons, cylinders, and other parts of your engine.

How do these impurities—they're actually acids—do their damage? Every 20 gallons of gasoline contains almost a half-cup of destructive sulfur. During the combustion process this sulfur joins with water in the oil system to form metal-eating sulfuric acid. These acids get to work on metallic parts and actually cause most of the wear formerly blamed on friction. The damage is extended as accompanying sludge and carbon deposits result in a wasteful loss of power.

MAGNA-POWER STOPS ACID WEAR

With test results to show that an alkaline agent would neutralize the acids and inhibit sludge and carbon formation, the Johns Manufacturing Co. has prepared a special magnesium alloy drain plug called Magna-Power. Tests conducted by the Canadian National Research Council (Canada's Bureau of Standards) and the Southern Analytical Laboratory in Jacksonville, Fla., have found that this magnesium alloy (1) effectively neutralizes corrosive engine acids, (2) greatly inhibits the formation of sludges, gums and resins and (3) destroys catalysts that cause oil breakdown products which foul spark plugs and cause preignition and internal shorting. Further experiments showed that by attaching a powerful Alnico magnet to the plug many iron and steel filings in the drain pan could be removed.



(unretouched)

Filter and oil sample (left) from a car using a Magna-Power plug show less sludge and contaminants—both oil and filter are still clean. Filter and oil sample (right) from car without Magna-Power show normal heavy deposits at same mileage.



(unretouched)

Heavy carbon deposits are actually "baked" on the piston crown (right). Formation of carbon on piston (left) shows remarkable difference when resins are inhibited by Magna-Power. Build-up of carbon causes loss of power and increases oil.

HERE ARE THE BENEFITS

With reduced acid wear and sludge formation, you get increased power for quicker starting and faster pick-ups. Elimination of many harmful spark plug deposits mean smoother driving, longer spark plug life. Less sludge also means (according to the Canadian Research Council) that oil can be used well over 3,000 miles and filter life is often doubled



Road tests also show that wear on pistons, rings, valves and other parts can be reduced BY AS MUCH AS 80%. This means a car may be driven well over 100,000 miles without an overhaul. Meanwhile the powerful magnet draws iron and steel filings out of the oil system.

WHY MAGNA-POWER IS NOT ORIGINAL EQUIPMENT

A new car, or one that has been rebuilt, should go through a break-in period. During the auto's first 1,000 miles rings are seated and the new engine, through a small amount of necessary wear, "loosens up" for maximum efficiency. The time to install Magna-Power in a new car is at the end of the break-in period when you change oil.

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CITY, ZONE, STATE ...





by John Booth

O. Now that spring is an established fact, I would like to tune my '55 Ford for summer driving. I know a few things I should do. such as draining the anti-freeze, but I feel there are perhaps a lot of tips that could make summer driving more enjoyable and safer which, at the same time, would also belp preserve my car, which is beginning to wear a bit thin around the edges. Jack McDale. Chicago.

A. You are right, Mr. McDale. There are many items of preventive maintenance that should be attended to for trouble-free summer driving; too many, in fact, for complete coverage in this limited space but let's consider a few of the most important:

Winter driving, with its accompanying temperature and weather extremes, imposes severe penalties on automobiles. Those who live in cold climates will find that the salt used to control snow and ice conditions on streets and highways has accumulated in every crack and cranny of both the chassis and body. If allowed to remain, it can work its corrosive action all summer, leaving premature rust holes in the body and destroying chassis lubricant. Preventive maintenance here should certainly include a thorough steam cleaning of both the body and chassis, paying particular attention to hard-to-get places such as the almost inaccessible areas under the fenders and grille.

Conventional wash jobs are next to use less for removing this salt accumulation and, contrary to many old wives' tales, steam cleaning will have no detrimental effect if reasonable care is used to prevent a blast of steam being directed on the body paint. Then too, there are several bonus features to be expected from steam cleaning. First, the engine and transmission will run up to 20 per cent cooler in summer because grease and dirt prevent natural radiation cooling by insulating the surfaces; secondly, it helps prevent an inadvertent injection of sand and other abrasive material in chassis grease points with each lubrication job.

After thorough steam cleaning, a good body wash job with high pressure water will force corrosive salt from under body trim and around door, deck and hood seams. This would also be a good time to have the car undercoated if it has never been done.

Next on the preventive maintenance agenda should be a grease job, and if mileage warrants it, the wheel bearings, transmission, differential and universal joints should be cleaned (or flushed) and the proper grease or oil replaced.

On the subject of oil-it must be remembered that salt destroys oil and grease, and wash jobs (and steam cleaning) remove it. This necessitates a careful oiling of usually forgotten points such as door, deck and hood hinges, door locks (use graphite), striker plates, etc. Accessory items such as generator, shift and accelerator linkages, heater

"De-Winterizing"

control cables and other movable units should receive careful attention in this department, too.

Engine oil should be drained, the engine flushed and the oil filter replaced. The long suffering air cleaner is another must in preventive maintenance. Dirt here restricts air intake and also allows abrasive dust to enter the engine, which accelerates wear.

While salt control is particularly vital in the snow and ice belt, it is also important in coastal areas. Salt air, and fine salt dust, along with higher humidity can wreak havoc, too. Periodic chassis and body cleaning makes good sense in any locality.

As soon as the danger of a sudden freeze is past, the winter's supply of anti-freeze should be drained and discarded. Remove the winter thermostat and replace with a factory summer unit. Check water hoses for deterioration and replace if they look at all suspicious. The whole cooling system should be reverse flushed and filled with clean water; then add a reputable rust inhibitor, which is available in practically all service stations.

Needless to say, an engine tune-up is always a good investment. A tip here would be to check the gas tank for water. A surprising number of engine malfunctions can be traced to this culprit. It can find its way into the gas tank through contaminated gasoline or condensation. Water is heavier than gas and will settle in the bottom of the tank. Fortunately the water level is usually low enough to prevent water being sucked up with the gasoline, but over rough roads this may happen. The result: harder starting, engine misfiring and fouled plugs.

The best way to remove this water is to unscrew the drain plug located in the bottom of the gas tank while holding a pail under the hole. If there is water in the tank it will drain out first. When gasoline starts running out, replace the plug tightly and check to be sure no leaks are apparent.

Tires should receive meticulous attention during your summer preparation, too. They should be visually checked for nails, cuts, bruised areas and wear. If the front tires show uneven wear, a front end alignment is in order. Don't neglect this. Poor alignment is not only dangerous but far more expensive than its correction. You can easily ruin a set of front tires in 4000 miles by improper wheel geometry. This is also a good time to rotate the tires for better wear equalization, too. There are several recommended tire switches, but usually cross swapping is the best. Exchange the left rear and right front. and right rear and left front.

Cr

of

If the tires show a definite sign of a bulge or side wall cut, discard them. The cheapest life insurance you can buy is good tires! This is doubly so in the face of hot weather. The normal heat rise in tires due to friction is accentuated by high temperatures and hot pavement surfaces which can make a border line tire let go with a resounding bang that can be heard all the way to the morgue.

Spring and summer rains require good windshield wipers. A winter of ice and snow has probably taken most of the life out of the wiper blades. They can be replaced with new ones in two minutes, which will add a lot of safety and comfort to summer driving. A check of door, deck and hood rubber seals is also in order. If they leak, have them replaced with factory replacements. The cost is modest and the added comfort is maximum.

There are many other minor maintenance procedures which tend to increase summer driving pleasure and safety. Many of them will automatically be followed during everyday checkups. Items such as battery terminals and cables, upholstery, floor mats, window glass and brakes should receive their just share of service or replacement.

Now would be an ideal time to have your headlights checked for focus. Also be sure the tail lights, stop lights and turn signals are in proper working order.

One final tip: include in your maintenance program a thorough check of your driving courtesy. Polish it until it shines and take it with you every time you drive. It is guaranteed to make your summer driving safer and more enjoyable.

Q. MOVING STARTER. I understand a kit is available to allow installation of the starter motor on an Olds engine on the right side instead of the left. Could you tell me who makes this kit? Steve Melchor, Stuart, Fla. A. The kit you refer to is available through various speed and sport shops. Check their ads in MT.

Q. LACQUER OR ENAMEL? Which would produce the best finish, lacquer or enamel? I want to paint my car myself with an air gun. Dane Genesee, Homestead, Pa.

A. Probably lacquer would be your best bet from the standpoint of ease of application. Enamel, properly applied, will last longer and produce a higher gloss but it has a tendency to run and requires a much higher degree of proficiency to spray correctly.

Q. In your March issue of Technical Questions, your answer to Mr. Wolf about the availability of a V8-60 from the factory suggested he get a '40 block which was cast, as the tin-sided blocks rust out. I believe you must be referring to a Crosley engine, because to the best of my knowledge Ford never made a tin sided V8 block. Am I right? Tom Murphy, Los Angeles.

A. Right you are, Tom. This is a case of two separate answers getting scrambled into one. The Ford V8-60 is not available from the factory, and a new cast-block, Crosley-type engine can be purchased from the Fageol Co. in Kent, Ohio. They currently use this basic engine in three versions of powerful outboard motors.

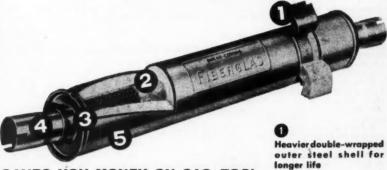
The MT technical staff would like to answer all letters personally, but we have been so hopelessly swamped with correspondence that it is impossible to do so. We have, therefore, instituted a policy of answering as many questions as possible only in the Technical Questions column.





A DYNA-GLAS MUFFLER

releases extra <u>power</u>,
gives your car
an exciting new sound



SAVES YOU MONEY ON GAS, TOO!

Your car, with its modern high-compression engine, has horsepower you may not be using. Its high-speed exhaust flow creates an excessive back pressure in many mufflers that actually robs the engine of horsepower.

With a Dyna-Glas muffler on your car you can feel and hear the difference. And you'll like it. The big 2 in. straight-through tube of this modern muffler reduces back pressure to an absolute minimum, lets the engine deliver flashing pickup, zooming acceleration. And with improved performance goes greater gas mileage.

Extra Fiberglas* packing between outer shell and inner tube traps the high frequency sound efficiently, lets only the smooth, satisfying power tones through. No harsh "hot-rod" blare—but a deep-throated purr that says "Power!"

For peak performance, mellow sound, and real gas savings, switch to a Dyna-Glas Muffler. Do it today!

*Trade-mark OCFCorp.

Rich gold-painted color
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(Advertisement)

McCulloch Supercharger



Racing is definitely in the news these days what with the Indianapolis 500-milet, and various sports and stock car events filling the sports pages. In addition, racing seems to be continuing its hold on Hollywood's moviemakers, the latest offering being Paramount's exciting "Devil's Hairpin," starring Cornell Wilde and, believe it or not, Chuck Porter's McCulloch supercharged Mercedes 300-SL!

McCulloch supercharged Mercedes 300-SL!

Chuck, the hard-driving body and fender magnate from Hollywood, loaned his sleek white job to Paramount for the filming of the thrilling race scenes. In fact, Chuck himself even piloted the SL in much of the action. We're glad to report that his trusty McCulloch belped power the car to victory in a spine-tingling finish.

NEW KIT DEPARTMENT: Now available are McCulloch supercharger kits for 1957 Oldsmobile 88 and 98 models. This means that there is now a McCulloch kit for virtually every American made '57 car.

Ford's latest innovation, the all-purpose Ranchero, seems to be catching on. And during the past few months we've installed scores of McCulloch superchargers on them. One thing I've noted is that many Ranchero owners are substituting the 312 cu. in. Thunderbird engine for the 245 in. power plant that's stock on the car-truck. This, plus McCulloch supercharging, makes the Ranchero a hot number, indeed.

Ranchero a bot number, indeed.

A letter received recently from McCulloch distributor Duane DePuy of Cleveland tells of the hot performance turned in at the Flagler Air Strip Drag Races in Florida by Ronnie Hasso. A Cleveland resident, Hasso won five class trophies in six nights of running with his '56 Chevrolet two door sedan (completely stock '57 engine with factory optional cam, straight-through mufflers and McCulloch supercharger blowing through a single four-barrel carburetor). Ronnie's speeds ranged from a low of 94 mph to 101 mph in the standing start quarter-mile.

NEW PRODUCT DEPARTMENT: The Paxton Fuel Pressure Regulator, a low-priced, high quality accessory to prevent carburetor loading and improve mileage is now available at all McCulloch distributors and dealers. Though it was originally designed for supercharged cars, the new Paxton unit will greatly increase the fuel system efficiency of any car.

If you've thought of stepping up your car's performance and acceleration without sacrificing engine smoothness or reliability, chances are a McCulloch supercharger is just the answer. And the extra 40% horsepower the McCulloch delivers can be used another way, too—for safe, sure highway passing.

For complete details on the McCulloch supercharger, just write to me, John Thompson, Paxton Products Div., McCulloch Motors Corp., 827 W. Olive St., Inglewood, Calif. Tell me the year and make of your car, carburetor type and list the power equipment you have. I'll send you the price, together with an illustrated folder and the name and address of your nearest dealer.

CAR, \$50

continued from page 34

quires a reasonable amount of knowledge of the subject, and lots of hard work to produce a satisfactory job. There are items of equipment to be rented and quality paints to be purchased. Most important is the hard work, because a finished job will be no better than the care and effort expended preparing the car for painting. Automotive enamels and lacquers are easily applied with a spray gun following the paint maker's instructions. Attention to the label makes the difference between success and failure when applying automotive finishes. A product such as Zolatone, which provides a matte finish as the result of spraying on multi-pigment paint, produces an unusual and practical finish-particularly practical because no polishing is involved in maintaining the finish. Brush painting is not entirely obsolete and it is true that many fine British cars were brush painted to a fine finish. It is seldom, however, one sees a satisfactory brush job. If you must try it, pick a warm day, use a good brush and make sure you flow on a thick coat of paint.

TWO TYPES OF MATERIALS are most often used for automobile refinishing. One of them is represented by "Duco" nitrocellulose lacquer, introduced in autumn of 1923 on the 1924 Oakland car. First shown only on a few models, Duco was soon extended to the entire 1924 Oakland line. By April, 1924, Cadillac, Cleveland, Franklin, Lexington, Marmon and Moon were offering cars with a Duco finish. Buick adopted Duco for its sports roadster in July, 1924, and by 1926 old-style paints and varnishes were almost entirely out of the auto finish picture. A new lacquer job (such as Duco) must be "compounded" or rubbed out with a fine abrasive to bring up the true beauty of color and finish. It will then present a mirrorlike gloss having color so deep and rich that it seems to have no base. Maintenance of a lacquer finish calls for an occasional cleaning with mild abrasive polishes to retain the mirror-like surface.

ENAMEL, the other refinish material, dries to a high gloss and requires no polishing to bring up its beauty. Nor does enamel require frequent abrasive polishing during its useful life, because the surface film of an enamel paint job is an almost clear resin which protects the color beneath it. When weathered enamel does require occasional polishing, only the mildest of solvent-type auto polishes should be used to prevent scratching and subsequent dulling of the glossy enamel protective surface.

When it comes to choosing a color, your selection is limited only by the rainbow. Usually, owners of fairly new cars have them repainted to match the original finish. Then, should a panel be scratched, the scratch will not show, as both coats will be the same color. Older cars are often changed drastically, as modern colors provide new-car pleasure at peanut prices. Despite over 1000 available shades in the automotive field, the most popular are grays, tans, and light greens.

HOW MUCH TO PAY for a paint job could be discussed for hours on end—and with good reason. For example: A prominent paint company demonstrates that decent enamel jobs on a small car will use nearly \$17 worth of material and a total of 16 working hours. For one painter to refinish a car properly, pay shop rent, and feed the family, an enamel job would cost something like \$75. It's interesting that 20 per cent is material cost, of which a third is thinners and reducers used in preparing the paint. The only way such prices can be fairly reduced is by volume production methods and power tools.

Because labor is such a high proportion of auto refinishing prices, it's fairly easy to separate the quality of enameling offered by refinishers. Paint jobs available in the \$19.95 bracket often consist of little more than washing the car and spraying on a thin color coat of inexpensive auto enamel. \$29.95 refinishing packages include washing the car, featheredging rough portions of old paint, and the application of a more weather-resistant coat of enamel. Shops selling the \$35 job usually include complete sanding of the car and careful masking to prevent over-spray. A \$50 enamel job could be pretty good. Such better quality work includes complete wetsanding, masking all weather stripping and other small details of the car, plus the application of at least two gallons (twice that used on less expensive jobs) of highquality automotive enamel. Over \$60 you are usually buying more attention to the preparation of the car, the use of expensive or difficult-to-apply metallic colors and detailed finishing of tires, floor mats, engine and chassis to new-car beauty.

LACQUER REFINISHING is another story. Whereas enamel dries with a gloss, newly applied lacquer must be "compounded" or buffed to bring up its true beauty. Because buffing represents additional hand work, a lacquer job costs more. A \$60 lacquer refinishing could include washing the car, minor feather-edging, spraying with a color coat, and compounding or buffing up the finish. For a lacquer job, \$75 could include all the above plus complete wet-sanding of the car body before painting. Some very beautiful multiplecoat lacquer finishes easily cost \$100 or more. They are well worth it for expensive or unusual cars and the cost is justified because of the hand work involved in preparation and finishing.

continued on page 66

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Name A

CAR, \$50

continued from page 64

It's possible to pay too much for a repaint job, particularly if you are billed for \$75 and get a job worth only \$50. The best way to get your money's worth is to visit each of the painters bidding on your car and make careful notes on the quality of work shown you. Use a personal check list detailing such things as the care exercised in masking chrome and window glass. Note if they protect door and trunk weatherstripping, that old nicks were filled and smoothed, that paint has not been applied over dirt, and that cars are readied for delivery with clean tires and interior.

WHAT HAPPENS during a refinish job is perhaps no better appreciated than by visiting a typical production line auto refinisher, such as the Infra-Red Auto Bake Painting Company in Glendale, Calif. They use a 14-point refinishing system, typical of many production shops. The first operation is a conference between service manager and car owner, when a complete survey is made of the car, detailing sheet metal repairs deemed necessary before repainting. The customer then selects from over 1000 colors displayed in a master color sample book, showing every shade used on American automobiles since 1939.

Once body work and color have been established, the car goes to the body shop, where fenders are repaired, nicks and dents removed, and rusted metal replaced. This work is followed by the "feather-edger" who gently sands the old paint and repaired metal so they blend into each other smoothly without an abrupt break where original paint was ground or chipped off. After feather-edging, one or more coats of prime-surfacer are sprayed on all bare or cleaned metal. The primer-surfacer contains a high percentage of solids which settle into tiny scratches and imperfections in the metal and in so doing create a smooth surface to support the final color coats.

The sloppiest operation of car painting is next. Wet-sanding, the master key to a really good refinishing job, abrades the old finish slightly and levels new areas of primer-surfacer. The result is old paint with tiny teeth all over it, into which the new film of paint can bite deeply. Then high-pressure air is used to blow water and dirt from the moldings, chrome trim, and sheet metal joints. The now thoroughly dry car is masked inside and out with "Permacel" tape and masking paper. Inside masking protects the upholstery from "over-spray" which might occur when door jams, sills, and frames are colored to match the exterior finish. Outside masking includes protection for the windows,

chrome trim, bumper, grille, lights, and lock covers.

Now each car is inspected to make sure all operations have prepared the car for application of the final color coats. The inspector also mixes the customer's color choice. To mix one quart of 1947 Studebaker Osage Blue, the inspector would use a recipe like this: with a Nason color mixer he would set the gauge arrow at 118 and run Chinese Blue into the can until the float indicator was level. He would add black to 185, white to 192, and yellow toner to 200. This mixture, plus thinner, would create a quart of accurately colored mixed spraying enamel.

The next operation counteracts the potential results of ambitious motorists keeping the family bus polished to a Sunday gleam. Unless they are removed, silicone auto polishes will cause new paint to spot, fish-eye, or blister. A silicone solvent and many clean rags are used on each car to thoroughly wipe down and dry off the old finish. The wheels, door jambs, underside of the hood, deck, and miscellaneous trim are then sprayed with enamel. Within a few minutes these areas are dust-free dry and solvent is used to wash off and remove over-spray on other parts of the car body.

An operation that most of us call auto painting is next. In a car-size paint booth,



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"Well, this is the last time I'll go anywhere with you."

the air of which is filtered through running water, at least a gallon of enamel is sprayed over the entire car. In this dustfree atmosphere, the paint is sprayed to an even thickness of at least five mils (0.005inch) without runs, sags, or orange peel. A few minutes after the enamel has been sprayed, the new finish has set. Now the car may be moved through another door into the 100,000-watt infra-red bake oven. An oven clock control heats the car and dries the paint for a predetermined length of time, after which the car is pulled out and space made for the next one ready to leave the paint spray booth. Soon the news paint has cooled enough to be handled. Masking paper is removed, the windows,

tires and interior cleaned, and the car is readied for delivery to its owner.

A side operation handled by many auto paint shops, is the custom refinishing of dash panels and window frames. Such non-mechanized work is usually completed after the exterior has been painted.

PROPER CARE of a new paint job begins the moment you take your car off the painter's lot. Please remember his parting instructions, "don't polish the car for at least 60 days." The reason he cautioned you was that as paint dries on the surface, it traps small amounts of thinner inside the film. As time passes, thinner will evaporate through pores of the finish, allowing it to harden and seal perfectly to the old finish or metal below. If you wax or polish a new paint job, thinner will be trapped in pores of the paint and the base of the finish could remain soft for many months, finally reaching the point where it would dull, spot or even peel from the underneath surface.

The care of lacquer consists of an occasional polishing with a mildly abrasive auto polish to restore that new car gleam. Following polishing of the lacquer, you should use either paste or liquid wax at monthly intervals to maintain a high gloss on the mirror-like surface. Caring for enamel is quite simple; just wash the finish frequently with cold water. If it appears slightly dirty, put a half cup of kerosene in a pail of water and use this solution to wash off road grime. Follow this solution with a generous hosing of cold, clear water. In some areas where extreme weather conditions exist, even the finest enamel may become dull quickly. Loss of color can be retarded by generous applications of paste or liquid wax. Waxes will also add a lacquer-like gleam to enamel finishes making it easier to maintain them with cold water washings.

TODAY A REVOLUTION is brewing in both factory production paint lines and refinishing shops. New automotive finishes, based on plastic, are now being tried on several makes of cars. Because of their plastic base, the new materials are reported to require little or no polishing during the average life of a car. Simple maintenance of original gloss and beauty by just washing the car appeals to those of us who would rather travel than spend Sunday sweating over a hot polish cloth. Because dirt and other normal traffic scum do not readily adhere to the plastic surface, even the washing is easier. And for the far distant future, we hear reports of car colors that will be established electronically, to be changed at the turn of a knobto match our mood or clothing.

What could possibly follow, remains to be seen. Perhaps some yet unborn physicist will create a means whereby, like the chameleon, we can change the color of our transportation with a thought. What a thought!



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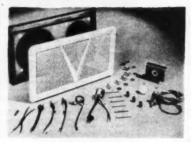
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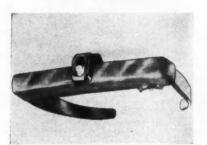
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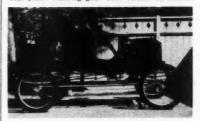
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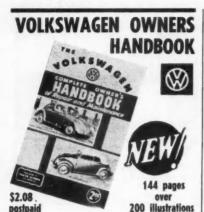
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MAGNIFICENT MG-TC. Completely restored: all parts renewed or replaced. Black, with red trim, white interior. Sacrifice at \$2600; will take trade. Make best offer. David M. Kiser, 8615 W. 74th Terr., Overland Park, Kan.

51 FRAZER 4-dr. conv. Flawless cond.; orig. one of 8 built. Automatic trans., power windows, automatic top, exc. chrome. Reasonable. Will consider trade for twin-cowl Packard phaeton or Auburn with clamshell fender, soft top. John Nuding, 211 Ontario Sc., Toledo, Ohio, Phone CHerry 1-3151.

41 CADILAC club conv. \$1000 spent on almost complete restoration. Available with or without custom ham rig. Best offer, or swap for sports car. Write for particulars. Burt Mezebish, WICGH, 382 Winthrop Ave., New Haven, Conn.

37 PACKARD Super 8 conv. cpe., with rumbleseat & sidemounts. Needs engine job & minor body work. \$250 or trade for Austin or similar. T. R. Skinner, Box 628, Mt. Sunapee, N.H.

33 PACKARD 8 4-dr. club sed. Restored to mint cond. 6 wire wheels, trunk rack, twin sidemounts, beautiful black lacquer, new chrome. \$850, or swap on 30-34 Packard phaeton. Robert N. Fischer, Rt. 3, Box 915-F, Evansville, Ind.

46 PLYMOUTH with '53 Dodge V8 engine. Exceptional thruout. Make offer, or will trade for Chev V8 engine & Powerglide trans. David Bengtson, Pelican Rapids, Minn.

52 PORSCHE Super conv. New Pirellis, Blaupunkt radio, new top, perfect turkish-rot lacquer, orig. eather-edged mats, full leather interior. \$1650: might trade. Leland Kreid, 706 Grove St., Alton. 101 BUICK rdstr. Body easily restored to mint. New top; engine & tires good. Licensed, ready to drive

III. '07 BUICK rdstr. Body easily restored to mint. New top: engine & tires good. Licensed, ready to drive home. Might swap for classic. Pix 25c. Mel Hanson, 333 S. Green St., Boone, Iowa.

SWAP

'29 FORD conv. pickup. Orig., except hydraulic brakes. Will trade for any make old rdstr. or rumble-seat cpe. Wendell Uhlenhopp, R.F.D. #1, Clarks-

seat cpe. Wendell Uhlenhopp, R.F.D. #1, Clarks-ville, Iowa.
36 CORD 810 sed. Mechanically A-1; rebuilt; stored 2 yrs. Body sound, partly customized. Paint poor, The specialized & expensive work is done. Consider English car or ? A. Chandler, 1915 River-side Dr., South Bend, Ind.
49 BUICK Model 71 Roadmaster sed. Will trade square for 46 thru '48 Lincoln Continental, conv. or cabriolet, orig. stock & restorable. Ronald F. Bogardus, Rt. 2, Jefferson, S. D.

WANTED

CORD TRANSMISSION—complete with shafting parts & wiring & shafter at steering post. Have new main case. Give cond. & price. E. Schlipf, Metamora,

parts & wiring & shafter at steering post. Have new main case. Give cond. & price. E. Schlipf, Metamora, Ill.

PARTS FOR MODEL A: Well fenders, grille guard screen, quail radiator cap, tire covers. For Model T: Floor mat, thermometer radiator cap, John Luciano, 1 Donna Lane, Preakness, Paterson 2, N. J. 32-33 STUTZ Super Bearcat, Davis 3-wheeler, or '48 Tucker. Would also consider '32-'36 Cadillac V-16 or '39 Pierce Silver Arrow if priced right. Lloyd Franklin, 110 N. 2nd St., Enid, Okla. RESTORING '31 BUICK 66-S spt. rdstr. Need new parts, such as valve lifters, handles, bumpers, etc. Also interested in Buick or Kissel rdstr. E. L. Kuhlmann, 520 O'Malley Dr., Billings, Mont. CATALOGS & brochures of any & all classics. Must be in mint cond. State asking price & cond. of subject matter offered. Also MoToR Annuals, 1920 thru 1929. Top prices paid. Sheldon J. Lewis, 61-32 13th St., Bayside, L.I., N.Y. '24 BUICK 4-cyl. touring car, Also other cars older than '15 models, especially Stutz & Mercer. Send info & pix. W. F. Oliver, Box 5547, Lubbock, Tex. COMPLETE SET of top bows for '21 Ford Model T rdstr. State cond. & price in 1st letter. Any leads appreciated, James W. Nortman, 2376 N. 81st St., Milwaukee 13, Wis. COMPLETE soft conv. top for '56 Thunderbird. New or used. H. Agoratus, 87 Blackford Ave., Staten Island 2, N.Y.
CORVETTE Fiberglas body shell, Jaguar trans., LaSalle stick trans. State part. cond., price in 1st letter. T. L. Bonfig, 47 E. 87th St., New York 28, or 1729 Palos Verdee Dr., W. Palos Verdee Est., Calif. '36 CADILLAC Model '75, 80, 85, or 90, in 5-pass.

or 1/29 Palos Verdes Dr., W. Palos Verdes Est., Calif. '36 CADILLAC Model 75, 80, 85, or 90, in 5-pass, sed, or cpe. Must be in mint or A-1 cond. State price & color. Curtiss R. Schafer, R.D. 2, Clarks Summit: Pa.

sed. or cpe. Must be in mint or a control of the price & color. Curriss R. Schafer, R.D. 2, Clarks Summit, Pa.
41 LINCOLN CONTINENTAL pares: rear fenders & skirts, rocker chrome, fenders & skirts for right side, left tail light lens. Name price & state cond. Dave Boisjolie, 1333 12th Ave. So., Fargo, N. D. 39 CADILLAC or LA SALLE radio, must be orige equip't. State price & cond. when writing. J. E. Rogers, Jr., 1611 Cayuga St., Bidg. 28, Louisville, Ky.

76-74 (INCLUSIVE) Cadillac, LaSalle, or Studebaker President conv. sed. Must have sidemounts, be in running cond., & reasonable. Send price & complete description to J. Anderson, 1402 Cedar St., Elkhart, Ind. Phone 3-3887.

75-20 R. 753 LINCOLN conv. Must have low mileage & be in good orig. cond. Include cond. & price in reply. Cash; prefer Midwest area. Gary La Court, 3001 W. Layton Ave., Milwaukee 15, Wis.



For years, they said a straight-through, no-back-pressure muffler couldn't be built that would keep noise within pleasing limits, but we did it!

Now, in the new Smooth-Tone Muffler, through an ingenious new principle and the use of tough new Absorbasonic packing, three amazing things occur:

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Let's Shed Some Light

WE HAVE WATCHED with awe for the past three years while the automobile industry has fought a battle every bit as fierce as the horsepower race. The battle, in this case, is the fight for bigger and more ridiculous tail lights.

Tail lights have achieved the size and brilliance of headlights, and they'll probably be bigger and brighter next year.

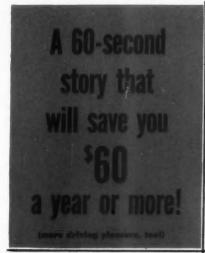
We realize that these miniature suns are supposed to notify the driver behind us that we're there, but if he's blinded by the flash of our brake lights and hits us anyway, what have we gained?

It's high time the industry re-evaluated and started again to manufacture cars with tail lights that are functional as well as decorative. The answer could be a car featuring a stop and turn signal separated from the regular tail light, as on the '57 Dodge or the Porsche. Both of these marques are on the right track, but they haven't gone far enough.

The tail light could be amber, with the stop light being a separate red one. This would make it hard for even the most inaturally driver to overlook and thus might reduce the number of rear a difficulty we read about daily.

It isn't inconceivable that the National Safety County of the S.A.E. could apply sufficient pressure to have some new system but interested upon all of our new cars. It certainly makes more sense than the present trend, which seems to place the entire emphasis on size.







Service managers, carburetion specialists and factory experts realized the problems of higher fuel pressures, iron oxides in the gaso-line and the increased fuel de-mands of higher horsepower engines, but . .



we hardly realized how serious the situation was until the trade started hearing actual experiences about Mileage Minder and performance tests were made by service managers and master mechanics . . .



Now, reliable tests have proven that Mileage Minder gives relief from gas waste, rough idling, dying, hard starting, dirt and iron oxides in the gasoline, flooding, traffic stalling, gas odors in the car, vapor lock . .



User told user, and word of mouth advertising quickly spread the news that now at last troubled car owners, fleet operators and car dealers can get quick and positive relief from fuel system problems!



Big gas savings, smoother idling, reduced carburetor wear, tiptoe power and flashing getaway . . . freedom from fuel system service worries . . . without restricting factory recommended fuel pressures.

.. "flooding"... "vapor lock"... "traffic stalls" "Gas hog". 'rough idling"...there's been a veritable plague of fuel system complaints as gas octanes increase and the horsepower race goes on!

Just cutting down fuel pressure is not the answer... for that may cause dangerous fuel starvation under fast acceleration and at high speeds. Instead, the answer is to smooth out fuel flow - take out the hammering pulsations that really cause the trouble.

That's what Mileage Minder's exclusive patented principle has done! Without restricting factory recommended fuel pressure, Mileage Minder smooths out fuel flow, filters out all impurities, saves gas, cuts down carburetor wear, eliminates flooding, galloping idle, vapor lock and stalling.

Pays for itself in a few weeks or your money back. At auto parts stores, car dealers, service stations and garages – or send coupon below. Do it today! Start saving gas and enjoying your car more now!

(Gas surges from fuel pump) (Smo-o-oth flow to carburetor)

Here's how Mileage Minder works for you

•Fuel leaves pump in hammering surges. Within Mileage Minder, micro porous filter removes all impurities, even small as .001"— then precision tensioned dual neoprene diaphragms tame hammering pulsations, while vapor dome traps vapor-locking gasses. Fuel speeds to carburetor in steady, clean, economical flow. No overriding carburetor float level - no flooding - no gas waste.

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Please send Mileage Minder postpaid, with satisfaction aranteed. I enclose cash, check or money order for \$6.95. (Quick action offer includes postage.)

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Make, year and model of car.

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more wax on your car than other one-step waxes. And J-Wax goes on smoothly, easilyevenly. Leaves no dull spots or streaks. You are sure of more all-around protection with J-Wax in any weather-from bumper to bumper, including the chrome!

Look for Johnson's J-Wax in this new keyopening can. Only J-Wax guarantees sealed-in freshness. It's the fastest, easiest way to genuine wax protection - paste wax protection!

